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File: JPAB

Jun 14, 1994

PUB-NO: JP406166305A

DOCUMENT-IDENTIFIER: JP 06166305 A

TITLE: RETRACTABLE SPIKE PIN TIRE

PUBN-DATE: June 14, 1994

## INVENTOR-INFORMATION:

NAME

COUNTRY

NAKAYAMA, SABURO

## ASSIGNEE-INFORMATION:

NAME

COUNTRY

NAKAYAMA SABURO

APPL-NO: JP03355365

APPL-DATE: November 22, 1991

US-CL-CURRENT: 152/210

INT-CL (IPC): B60C 11/16

## ABSTRACT:

PURPOSE: To prevent a tire from damaging the road face in traveling on the snowless by making the spike pins retractable in the thick wall section of a tire tread or the tire tread freely when required, by manual operation at a tire side or operation from a vehicle cabin at proper time so that the tire may be changed to an ordinary tire while traveling on an ordinary road, and to a spike tire when traveling on a snow road.

CONSTITUTION: The retractable spike pin 5 on a tread 1 provided in the thick wall section of a tire tread section. Movable protrudent sections 8 on a rotating cam plate 6 are provided to push up the bottom sections of the spike pin 5. A fastening body 25 rotatable provided with a rotor having a cam 27 for turning a lever-like rotor 30, to which the ends of (cables 10) and (11) are connected. The rotating cam plate 6 are also connected to the cables 10, 11 to be rotated to operate retractable spike pin 5 manually at the wheel side or from the vehicle cabin.

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L5: Entry 2 of 2

File: DWPI

Jun 14, 1994

DERWENT-ACC-NO: 1994-230509

DERWENT-WEEK: 199428

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TITLE: Tyre retractable spike pin embedded in tread, for easily retracting -  
comprises spike pin fixed to elastic baseplate, rotary plate, projection and wires  
to rotate plate to push-out pin or retract in hole

## PATENT-ASSIGNEE:

ASSIGNEE

CODE

NAKAYAMA S

NAKAI

PRIORITY-DATA: 1991JP-0355365 (November 22, 1991)

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## PATENT-FAMILY:

PUB-NO

PUB-DATE

LANGUAGE

PAGES

MAIN-IPC



JP 06166305 A

June 14, 1994

013

B60C011/16

## APPLICATION-DATA:

PUB-NO

APPL-DATE

APPL-NO

DESCRIPTOR

JP 06166305A

November 22, 1991

1991JP-0355365

INT-CL (IPC): B60C 11/16

ABSTRACTED-PUB-NO: JP 06166305A

## BASIC-ABSTRACT:

The retractable spike pin embedded in the tread comprises a spike pin (5) fixed to an elastic baseplate (4), a rotary plate (6) rotative around the pin (7), which has a projection (8) to push up the spike pin (5) through the baseplate (4), and wires (10) and (11) to rotate the rotary plate (6) to the direction J or K, so that the spike pin (5) is pushed out beyond the tread surface (2) or is retracted into the hole. The tyre is provided with as many retractable spike pins as required.

ADVANTAGE - The spike pins are easily pushed out or retracted in the tread, enabling the tyre to be doubly used as an ordinary tyre or spiked tyre.

CHOSEN-DRAWING: Dwg.1

TITLE-TERMS: TYRE RETRACT SPIKE PIN EMBED TREAD EASY RETRACT COMPRISE SPIKE PIN FIX  
ELASTIC BASEPLATE ROTATING PLATE PROJECT WIRE ROTATING PLATE PUSH PIN RETRACT HOLE

DERWENT-CLASS: A95 Q11

CPI-CODES: A12-T01;

ENHANCED-POLYMER-INDEXING:

Polymer Index [1.1] 017 ; H0124\*R Polymer Index [1.2] 017 ; ND01 ; K9416 ; Q9999  
Q9256\*R Q9212

POLYMER-MULTIPUNCH-CODES-AND-KEY-SERIALS:

Key Serials: 0009 0231 2826 3258

Multipunch Codes: 017 032 04- 41& 50& 651 672

SECONDARY-ACC-NO:

CPI Secondary Accession Numbers: C1994-104957

Non-CPI Secondary Accession Numbers: N1994-182236

(19)日本国特許庁(JP)

(12) 公開特許公報(A)

(11)特許出願公開番号

特開平6-166305

(43)公開日 平成6年(1994)6月14日

(51)IntCl.<sup>5</sup>

B 6 0 C 11/16

識別記号

庁内整理番号

F I

技術表示箇所

B 8408-3D

C 8408-3D

審査請求 未請求 請求項の数14(全 13 頁)

(21)出願番号 特願平3-355365

(22)出願日 平成3年(1991)11月22日

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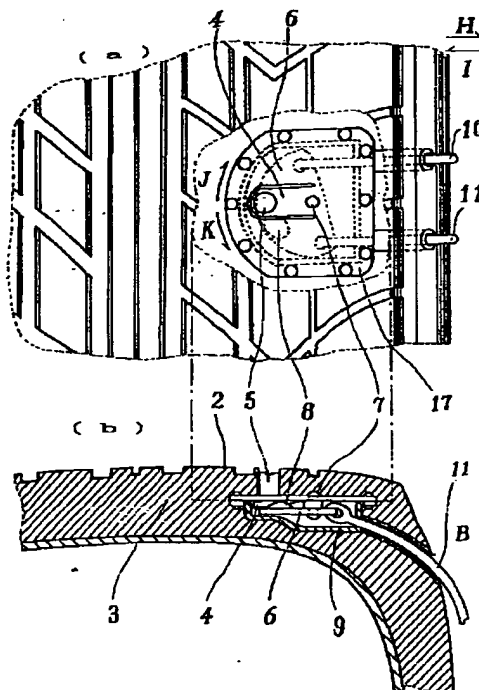
宮崎県西臼杵郡日之影町大字七折9955番地

(54)【発明の名称】 スパイクピン出入タイヤ

(57)【要約】

【目的】 タイヤ接地面肉厚部、又は接地面部に出入可能に埋設されたスパイクピンを必要に応じ、適時タイヤ側面の手作業又は車内よりの操作によって出入自在とし、通常道路に於ては普通タイヤとして、積雪道路に於てはスパイクタイヤとして、適宜変化出来る様にし、無雪道路走行において路面の損傷を防止出来る様にしたものである。

【構成】 タイヤ接地面部の肉厚部内に、接地面に突出し得る様に可動としたスパイクピンを設け、該スパイクピン底部を押し上げる様にした可動可能な突部を設け、該突部を動かす紐状物(9)、(10)をタイヤ側面に摺動可能に導き出し該末端を各々接続されたてこ状回動体を回動させるカム付回動体を回動可能に設けられた締付具本体を、タイヤ側面又はホイールに設け、カム付回動体に被係合片を設け、該被係合片を手にて又は車体より突出させ得る係合片にてカム付回動体を回動させる。



## 【特許請求の範囲】

1、タイヤ接地面又はタイヤ被覆体接地面に設けた孔より出入可能としたスパイクピンを設けられた弾性体を前記接地面部の肉厚部内部に設け且該弾性体底部に設けた隙間に介在し且該弾性体底部に接触作動す可き凸部を備えた回動体を設け且該回動体の回動部分の一部に紐状物を又該他部分に他の紐状物を各々着し且該紐状物の各々の他端を前記タイヤ又はタイヤ被覆体の側面部に摺動可能に導き出して成るスパイクピン出入タイヤ。

2、タイヤ接地面又はタイヤ被覆体接地面に設けた孔より出入可能としたスパイクピンを嵌設した保持枠体を前記接地面部の肉厚部内部に設け且前記スパイクピンにタイヤ半径方向中心方向への畜力を施し且該スパイクピンの底部近辺に設けた隙間に介在し該スパイクピン底部に接触作動す可き凸部を備えた回動体を設け且該回動体の回動部分の一部に紐状物を又該他部分に他の紐状物を各々着し且該紐状物の各々の他端を前記タイヤ又はタイヤ被覆体の側面部に摺動可能に導き出して成るスパイクピン出入タイヤ。

3、タイヤ接地面又はタイヤ被覆体接地面に設けた孔より出入可能としたスパイクピンを嵌設し且底部に液体を内包した軟性袋状膜を付けたシリンダーを前記接地面部の肉厚部内部に設け且前記軟性袋状膜底部に設けた隙間に介在し且該軟性袋状膜底部に接触作動す可き凸部を備えた回動体を設け且該回動体の回動部分の一部に紐状物を又該他部分に他の紐状物を各々着し且該紐状物の各々の他端を前記タイヤ又はタイヤ被覆体の側面部に摺動可能に導き出して成るスパイクピン出入タイヤ。

4、タイヤ接地面又はタイヤ被覆体接地面に形成した窪み内にスパイクピンを植設し且該窪み部底部肉厚内部に設けた隙間に介在し且該窪み底部部分に接触作動す可き凸部を備えた回動体を設け且該回動体の回動部分の一部に紐状物を又該他部分に他の紐状物を各々着し且該紐状物の各々の他端を前記タイヤ又はタイヤ被覆体の側面部に摺動可能に導き出して成るスパイクピン出入タイヤ。

5、特許請求の範囲第1～4項の回動体に着した紐状物を排し該回動体の回動部分の一部に着した紐状物の他端をタイヤ又はタイヤ被覆体のA側面に摺動可能に導き出して設け且前記紐状物を着した前記回動体の同部分又は他の部分に別なる紐状物を着し且該紐状物の他端を前記タイヤ又はタイヤ被覆体のB側面に摺動可能に導き出して成るスパイクピン出入タイヤ。

6、タイヤ接地面又はタイヤ被覆体接地面に形成した窪み内にスパイクピンを植設し且該窪み部底部肉厚内部に設けた隙間に介在し且該窪み底部部分に接触作動す可き凸部を備えた帯板をその一端を前記タイヤ又はタイヤ被覆体のA側面へ又前記帯板の他の一端を前記タイヤ又はタイヤ被覆体のB側面へ摺動可能に導き出して成るスパイクピン出入タイヤ。

7、タイヤ接地面又はタイヤ被覆体接地面に形成した窪

み内にスパイクピンを植設し且該窪み部底部肉厚内部に隙間を設け且該隙間に通じるホース又はパイプを前記タイヤ又はタイヤ被覆体の側面部に導き出して設け且前記隙間及び前記ホース又はパイプ内に油圧又は空気圧作用を施し得る状態としたスパイクピン出入タイヤ。

8、特許請求の範囲第1～3項の回動体及び紐状物を排し且第1項の弾性体の底部又は第2項のスパイクピン底部又は第3項の軟性袋状膜底部に気密袋を設け且該気密袋内に通じるホース又はパイプの一端をタイヤ又はタイヤ被覆体の側面部に導き出して設け且前記気密袋及び前記ホース又はパイプ内に油圧又は空気圧作用を施し得る状態としたスパイクピン出入タイヤ。

9、特許請求の範囲第1～4項の中から選出される項のタイヤ又はタイヤ被覆体の側面に導き出された一紐状物を一端に着され且他の紐状物を他の一端に着されたてこ状回動体と該てこ状回動体に接触作用するカム付回動体を設けた締付具本体を前記タイヤ又はタイヤ被覆体の側面又はホイールに設ける様にしたスパイクピン出入タイヤ。

10、特許請求の範囲第5項のタイヤ又はタイヤ被覆体のA側面に導き出した紐状物にA側面方向への畜力を施し且前記タイヤ又はタイヤ被覆体のB側面に導き出した紐状物の一端を前記タイヤ又はタイヤ被覆体のB側面又はホイールに設けた締付具の締付部分に又は前記タイヤ又はタイヤ被覆体のB側面又はホイールに設けた締付具本体に回動可能に設けられたカム付回動体のカム部に作動されるてこの一端に着する様にしたスパイクピン出入タイヤ。

11、特許請求の範囲第6項のタイヤ又はタイヤ被覆体のA側面に導き出した帯板にA側面方向への畜力を施し且前記タイヤ又はタイヤ被覆体のB側面に導き出した帯板の一端を前記タイヤ又はタイヤ被覆体のB側面又はホイールに設けた締付具の締付部分に又は前記タイヤ又はタイヤ被覆体のB側面又はホイールに設けた締付具本体に回動可能に設けられたカム付回動体のカム部に作動されるてこの一端に着する様にしたスパイクピン出入タイヤ。

12、特許請求の範囲第7項又は第8項のタイヤ又はタイヤ被覆体の側面に導き出されたホース又はパイプの末端を着装されるマスターシリンダーに嵌設されたピストンと該ピストンに接触作動す可きカムを有するカム付回動体を回動可能に設けたマスターシリンダー保持体を前記タイヤ又はタイヤ被覆体の側面又はホイールに設けて構成したスパイクピン出入タイヤ。

13、特許請求の範囲第7項又は第8項のタイヤ又はタイヤ被覆体の側面部に通じさせたホース又はパイプの個々の末端に個々のバルブを又は前記タイヤ又はタイヤ被覆体の円周に沿い配列され該側面に配設状態とした前記個々のホース又はパイプを連通させ且該連通部又は前記ホース又はパイプの任意箇所

装着して成るスパイクピン出入タイヤ。

14、特許請求の範囲第7項又は第8項記載のホース又はパイプの末端を連通装着される切換バルブをホイールの表面側又は表面側付近又は該裏面側又は裏面側付近に設け且前記切換バルブに連通させた高圧気体用タンクを前記ホイールの任意個所に設けて構成したスパイクピン出入タイヤ。

#### 【発明の詳細な説明】

##### 産業上の利用分野

本発明は道路の状況、つまり積雪又は凍結道路から通常道路へ又は逆の変化に応じて、タイヤ接地面よりスパイクピンを簡単な手作業もしくは車内より（走行中）の操作により出入れ出来る様にしたスパイクピン出入タイヤに関する。

##### 従来の技術

従来、スパイクタイヤは接地表面の円周に沿いスパイクピンを配列して植設したものであり、積雪、非積雪の道路状況の変化に関係なく無差別に走行するのが常であった。

##### 発明が解決しようとする問題点

従来、ピンが常時植設されたスパイクタイヤで走行するに際し、積雪道路から無雪道路、又積雪道路への走行と云う状況、特に山間部～都市部へ等の一時の降雪後の残存のずれがある地域での状態は道路状況の変化に関係なく走行せざるをえなく、その結果通常道路の走行に於て徒に路面を損傷させるのではなくスパイクピンの摩耗を早める等の欠点があった。斯かる問題を解決する為、積雪、凍結道路ではスパイクタイヤとして、通常道路では普通のタイヤとして臨機応変にタイヤ接地面よりスパイクピンを自由自在に出入出来る様にしたものである。

##### 問題点を解決するための手段

本発明は第17図の如く、タイヤ（1）の接地面（2）、接地面（2）の肉厚部（3）を主な施設箇所として実施され、本発明の記載実施例としては接地面（2）の円周に沿うC、D条線、円周に沿う各E線の如く配設される事を一例の基本とし、C、D線は任意数条でも良い。又一実施態様でタイヤ（1）のA側、B側に沿う実施箇所がA側のE線とB側のE線をずらして実施される事も出来得る。Fは各種実施例の一部材個所の概要を示し、その図示下部Gを本明細書中全て底部と称する。尚タイヤ（1）のA、B側はタイヤ内側、外側と限定するものではない。又、第1～7図aは第17図中D条線部～B側部の接地面（2）を正面視した平面図である。又、本発明は後述する種々の実施態様を第18図に示した如きタイヤ被覆体（59）の肉厚部（60）に於て実施する事が出来、タイヤ被覆体（59）は1～数個所で途切れたものを賢固に装着する事に依り可能である。上述を基本概要として、各実施例の構成を述べると次の通りである。第1図の如く、肉厚部（3）内部に、

着した弾性体（4）と該底部に設けた隙間に介在し且該底部分に接触作動す可き凸部（8）を有する回動体

（6）を設け、回動体（6）に紐状物（10）、（11）を着し、その各々他端をタイヤ（1）側面へ摺動可能に導き出す。第2図の如く、肉厚部（3）内部に、接地面（2）より出入可能としたスパイクピン（5）を深部方向への畜力を施して保持する保持棒体（12）とスパイクピン（5）底部に設けた隙間に介在し且該底部分に接触作動す可き凸部（8）を有する回動体（6）を設け、回動体（6）に紐状物（10）、（11）を着し、その各々他端をタイヤ（1）側面へ摺動可能に導き出す。第3図の如く、肉厚部（3）内部に、接地面（2）より出入可能としたスパイクピン（5）を嵌設し且底部に液体を内包した軟性袋状膜（15）を着したシリンダー（14）を設け、且軟性袋状膜（15）底部に介在し且該底部に接触作動す可き凸部（8）を有する回動体（6）を設け、回動体（6）に紐状物（10）、（11）を着し、該各々他端をタイヤ（1）側面へ摺動可能に導き出す。第4図の如く、接地面（2）に形成した窪み（16）内にスパイクピン（5）を植設し、窪み（16）部底部の肉厚部（3）内部に設けた隙間（18）に介在し且窪み（16）部底部に接触作動す可き凸部（8）を有する回動体（6）を設け、回動体（6）に紐状物（10）、（11）を着し、該各々他端をタイヤ（1）側面へ摺動可能に導き出す。第5図の如く、接地面（2）に形成した窪み（16）内にスパイクピン（5）を植設し、窪み（16）部底部の肉厚部（3）内部に設けた隙間（18）に介在し且窪み（16）部底部に接触作動す可き凸部（8）を有する回動体（6）を設け、回動体（6）に紐状物（19）を着し該他端をタイヤ（1）側面へ、又回動体（6）に紐状物（20）を着し該他端をタイヤ（1）A側へ摺動可能に導き出す。尚、当図示例は、第1～3図示例に於て上述同様実施出来るもので、例示として図示したものである。第6図の如く、接地面（2）に形成した窪み（16）内にスパイクピン（5）を植設し、窪み（16）部底部の肉厚部（3）内部に設けた隙間（18）に介在し且窪み（16）部底部に接触作動す可き凸部（8）を有する帯板（21）を、その一端をタイヤ（1）のA側面へ、該他端をタイヤ（1）のA側面へ摺動可能に導き出す。第7図の如く、接地面（2）に形成した窪み（16）内にスパイクピン（5）を植設し、窪み（16）部底部の肉厚部（3）内部に設けた隙間（22）とホース（23）を連通させしめ、且ホース（23）の他端をタイヤ（1）側面へ導き出す。第8図は第3図示例を例として掲げたが、軟性袋状膜（15）、第1図中弾性体（4）、第2図中スパイクピン（5）の各底部に気密袋（24）を設け、それに連通するホース（23）をタイヤ（1）側面に導き出す。第9図の如く、タイヤ（1）等又はホイール側面に設けた締付具本体（25）に一定棒回動可能と

したカム(27)付回動体(26)、カム(27)に接触作動されるてこ状回動体(30)を設け、てこ状回動体(30)の両端に第1~4図示例から選出される紐状物(10)、(11)を各々遊着する。尚、第1~4図示例の接地面(2)の円周に沿う各E線上の如く配設された紐状物(10)、(11)を遊着した状態を示す。第10図aの如く、第5図示の各紐状物(19)の各末端に各架具(34)を各々着し、且各架具(34)にスプリング(35)を張架し、各紐状物(19)に矢印I方向への畜力を施し、且第5図示の各紐状物(20)の各末端を第9図示の各てこ状回動体(30)の各図示右端に遊着する。尚この場合、各てこ状回動体(30)の各左方向部には何も着されていない。第11図の如く、第6図示の各帯板(21)の各B側端に着した短片(37)に遊嵌するスリット(36)を一端に有するてこ状回動体(30)を支軸(31)に依り回動可能に設けられ、且てこ状回動体(30)の図示左側に接触作動するカム(27)を有するカム付回動体(26)と該任意個所に設けたスリット(28)に遊嵌状態とした回動阻止片(29)とを設けられた締付具本体(25)をタイヤ(1)又はタイヤ被覆体(59)又はホイールの側面に設け、且第6図示の各帯板(21)のA側に導き出した各末端に第10図bの如く各々着した架具(34)にスプリング(35)を各々張架し、帯板(21)に矢印I方向への畜力を施す。第12図の如く、第7図、又は第8図図示のホース(23)の各末端に各々連通着された各マスターシリンダー(39)を設けられ、且マスターシリンダー(39)に挿設されたピストン(40)に接触作動するカム(27)を有するカム付回動体(26)と該任意個所に設けたスリット(28)に遊嵌状態とした回動阻止片(29)とを設けられたマスターシリンダー保持体(38)をタイヤ(1)又はタイヤ被覆体(59)又はホイールの側面に設ける。第13図の如く、第7図、又は第8図図示のホース(23)の各末端にバルブ(42)の如きバルブを設ける。又は各ホース(23)を連通ホース(41)を以て連通させしめ、且ホース(23)又は連通ホース(41)の任意個所に少くとも一個のバルブ(42)を設る。第14図の如く、第7図、又は第8図図示の各ホース(23)を連通させた連通ホース(41)から更に連通、導き出されたホース(46)を着装され且ホース(46)とパイプ(45)を連通さす可き通気用欠如部(50)、排気用欠如部(51)を備え且矢印R方向又は該逆方向へ滑動し又且被係合片(48)を設けられた滑動バルブ(49)を備えた切換バルブ本体(47)をホイール(43)の側面に設け、且パイプ(45)に連通された高圧気体用タンク(44)をホイール(43)の任意個所に設ける。尚、高圧気体用タンク(44)は現存のグリーンガスタンク又はそれに類する液化気体タンク等を以て実施され、それ等を称して高圧気体用タンクとす。又、第14

図cはbの変形を示し、被係合片(48)を着され且ホース(46)とパイプ(45)を連通さす可き通気用欠如部(孔)(50)、排気用欠如部(孔)(51)を備え、且矢印L、M方向へ限定回動する回動バルブ(52)を以て前述b例の如くホイール(43)に設けて構成しても良い。第15図の如く、第9、11、12図の中から選出される機構中の被係合片(33)又は第14図の機構で以て構成された被係合片(48)に係合す可き係合片(55)を図示上下に滑動可能に備えた係合片収納本体(54)をダンパー(53)に取り付け、且係合片(55)に操作ケーブル(56)を接続し、適時係合片(55)を図示上下に操作ケーブル(56)を以て動かす事が出来る様にする。尚、以上各図符合の補足説明すると、第1、2図の(7)は各回動体(6)を回動可能に軸看する支軸、第1、2、4、5図の(17)は各回動体(6)を支軸(7)に依り設置する為の基体、第1図の(9)は作動部の空間を確保する為のカバー、第2図の(13)はスパイクピン(5)を底部に引き下げる為のスプリング、第9、11図の(32)はカム付回動体(26)を遊嵌する為の保持片、第9図の(28)はスリット、(29)はスリット(28)内にあって締付具本体(25)に設けられた回動阻止片、(31)はてこ状回動体(30)を設ける為の支軸である。以上、各図に基づく構成は、第1~14図と第1~14実施例とを順次合わせて示しており、更に構成細部の説明は次の通りである。第1~5図示の紐状物(10)、(11)、(19)、(20)等は細い鋼性ワイヤロープ、強靱な合成紐等を以て構成される。第1~3図のカバー(9)は内部作動部に空間を確保する為のもので、これを不用としても良い。必要な空間の形状で作動部(回動体(6)、帯板(21)等)を液体又は気体に依り消失、溶出する物質で包含してタイヤ形成後除去する。これは第4~8図についても同様。第4~5図示の基体(17)は図示形状に限定されるものではなく、要は該一部を肉厚部(3)内に堅固に埋設、保持する。第1~5図示の基体(17)等を不用とし、回動体(6)を支持する支軸(7)の一部(両端等)、弾性体(4)、保持棒体(12)、シリンダー(14)等の一部を肉厚部(3)に堅固に包み込んで埋設して構成しても成し得る。第7図示の隙間(22)は第8図示での気密袋(24)状としても良い。第10図示の畜力の他の方法として、例えばスプリングを放射状(タイヤの半径方向に配列)に配設し、直接紐状物(19)、帯板(21)に張架しても良い。第9図示の他例として、(10)、(11)の何れかの紐状物のみをてこ状回動体(30)で引張る如くし、他の紐状物に半径方向中心部へ引張る畜力を施しても為し得る。第16図は、第11図示の機構を手動としたもので、タイヤ(1)側面に導き出された各帯板(21)に架具(57)を各々着し、各架具(57)にターンバックル(58)を取付けたも

ので、他に小型化出来る現存の締付具を以て為し得る事は勿論である。第9、11、12図示の被係合片(33)は車輪側面全面よりやや軸線方向へ突出したものである。第12図示のマスタースリンダー(39)は個々のホース(23)に着して構成したが、これ等を一括した容量の大きいマスタースリンダーを使用し、且第13図示の如くまとめたホースに連通して構成しても為し得る。又、第13図示のホース(23)、連通ホース(41)等をタイヤ(1)側面に埋設状態とし、バルブ(42)のみを露出して構成しても良い。第9〜12及び16図の締付機構、蓄力機構はホイールに設けても良い。尚タイヤ(1)側面に設ける場合は締付具本体(25)、マスタースリンダー保持体(38)等を多少の変形を為し得る部材を以てし、タイヤ(1)側面に接着又は一部埋設状態で取付ける。第14図示のパイプ(45)を不要とし、ホイールバランスを考慮の上、切換バルブ(47)と高圧機体用タンク(44)を直接接続しても良い。第14図では被係合片(48)以外の機構はホイール(43)側面より突出しない程度に埋設状態に設けている事を示す。又切換バルブ(47)、又は高圧気体用タンク(44)もホイール(43)の図示反対側に設け、被係合片(48)のみをホイール外径近くの側面に少し突出した状態で設けても為し得、該構造は第15図示構造との組合せに適する。第7、8図に於ては第17図示のD条に且各E線上に配設された事を例示して掲げたが、これを(C線、D線二条で実施した場合)C線上に施設したものに連通させても良い。尚、これ等C条線施設のもの、D条線施設のものが個々の場合、C条線施設のものから導き出されるホースもB側とし、これを第12図の同一機構に接続する事が望ましい。第1〜6図示の機構を第17図の如くD条線、C条線に且各E線上に配設された場合、紐状物(10)、(11)、(19)、帯板(21)等を各々D条線施設のものとC条線施設のものとを接続し連動させる如く構成しても良い。

#### 作用

以下、各実施例中類似するものに於ては一括して説明する。第1〜4図示例に於ては、図示状態から紐状物(10)が矢印H方向へ引張られると、各回動体(6)が矢印J方向へ回動する事に依り各凸部(8)は第1図の弾性体(4)、第2図のスパイクピン(5)、第3図の軟性袋状膜(15)、第4図の窪み(16)部の底部を押し上げ、接地面(2)よりスパイクピン(5)を突出させる事が出来、然る後適時、紐状物(11)が矢印H方向へ引張られ(紐状物(10)は矢印Iへ移行)回動体(6)が矢印K方向に回動すると、前記弾性体(4)、スパイクピン(5)、軟性袋状膜(15)、窪み(16)部部材の各底部方向への復帰力に依り各スパイクピン(5)を接地面(2)より没入させる事が出来る。第5図示例では、紐状物(20)が矢印H方向へ引張られ

ると、回動体(6)が矢印J方向へ回動し、凸部(8)が窪み(16)部底部を押し上げる事に依り、スパイクピン(5)を接地面(2)より突出させる事が出来、然る後紐状物(19)が矢印I方向へ引張られると、回動体(6)は図示状態に戻り、窪み(16)部部材の復帰力に依りスパイクピン(5)を接地面(2)より没入させる事が出来る。(第1〜3図構成も同作用)

第6図示例では、帯板(21)が矢印H方向へ引張られると、凸部(8)が窪み(16)部底部を押し上げる事に依り、スパイクピン(5)を接地面(2)より突出させる事が出来、然る後帯板(21)が矢印I方向へ移行すれば、図示状態に戻り、窪み(16)部部材の復帰力に依りスパイクピン(5)を接地面(2)より没入させる事が出来る。第7〜8図では、ホース(23)を通じ隙間(22)、気密袋(24)に液体又は気体の圧力が加わると、窪み(16)部底部、軟性袋状膜(15)を押し上げる事に依り、スパイクピン(5)を接地面

(2)より突出させる事が出来、前記圧力が減圧となれば窪み(16)、軟性袋状膜(15)の復帰力に依りスパイクピン(5)を接地面(2)より没入させる事が出来る。第9図に於ては、カム付回動体(26)をスリット(28)分矢印L方向へ回動させると、カム(27)がてこ状回動体(30)の図示左方を押し上げる事に依り、紐状物(10)を図示下方へ引張り且紐状物(11)を図示上方へ押し上げ、然る後カム付回動体(26)が矢印M方向へ回動すれば、紐状物(11)を図示下方へ引張り且紐状物(10)を図示上方へ押し上げ、図示状態に戻る。尚、カム付回動体(26)を回動させる手段として、被係合片(33)を手にて動かす方法、

車内からの操作に依り動かす方法とがあり、後者については、第15図の操作ケーブル(56)を車内より引き係合片(55)を被係合片(33)に係合させて車を若干前進又は後退させる事に依り上記作動を為し得る。又、係合片(55)、被係合片(33)は必要作動後の係合を解除する為、前記一方又は双方共変形をし且弾性を持たせた部材を以てする。又、前記紐状物(10)、(11)の移行は第1〜4図示機構又は第5図示機構に連動される。第5、9、10図の組合せで構成され、紐状物(19)に矢印I方向へ蓄力を施し且紐状物(20)を第9図aでてこ状回動体(30)の図示右端に着装した状態で、カム付回動体(26)を矢印L方向へ回動させるとカム(27)がてこ状回動体(30)左方を押し上げ、矢印I方向の蓄力に抗し紐状物(20)を矢印H方向へ引張り、回動体(6)が矢印J方向へ回動し、凸部(8)が窪み(16)部底部を押し上げる事に依り、スパイクピン(5)を接地面(2)より突出させ、然る後、カム付回動体(26)が矢印M方向へ回動すれば、回動体(6)は矢印K方向へ回動し、窪み(16)部の復帰力に依り図示状態に戻り、スパイクピン(5)は接地面(2)より没入する。尚、窪み(16)部を第



1～3図のスパイクピン部に置きかえた構造のものにあっては前記凸部(8)が、第1図の弾性体(4)、第2図のスパイクピン(5)の底部、第3図の軟性袋状膜(15)の底部に前述同様に作動(押し上げ)する事は勿論である。又、当実施例中、第9図構造を第16図構造のものに置きかえた場合、同図示帯板(21)部分を紐状物(20)にかえた状態で、ターンバックル(58)を矢印T方向へ廻せば、紐状物(20)を矢印H方向へ引張り、前述同様作用が為される。第6、10、11図の組合せて構成され、タイヤ(1)のB側へ導き出された帯板(21)を第11図示のてこ状回動体(30)に装着し、且タイヤ(1)のA側へ導き出された帯板(21)を第10図bの如くスプリング(35)を張架した状態で、カム付回動体(26)を矢印L方向へ回動させるとカム(27)がてこ状回動体(30)の左方を押し上げ、矢印I方向への蓄力に抗し帯板(21)を矢印H方向へ摺動させて、凸部(8)が窪み(16)部底部を押し上げ、スパイクピン(5)を接地面(2)より突出させる事が出来、然る後カム付回動体(26)を矢印M方向へ回動させると矢印I方向への蓄力に依り帯板(21)は矢印I方向へ移行し、スパイクピン(5)を接地面(2)より没入させる事が出来る。又、当該実施例中第11図構造を第16図構造のものに置き変えた場合、ターンバックル(58)を矢印T方向へ廻し、然る後適時矢印S方向へ廻せば、前述同様の作用が為される。第7図又は第8図構造のホース(23)を第12図示のマスターシリンダー(39)に各々連通着した状態で、カム付回動体(26)を矢印L方向へ回動させると、カム(27)が各々ピストン(40)を矢印P方向へ押し、内部の油圧用オイルが隙間(22)又は気密袋(24)内に圧入し、窪み(16)部底部又は軟性袋状膜(15)底部を押し上げ、スパイクピン(5)を接地面(2)より突出させる事が出来、然る後適時、カム付回動体(26)を矢印M方向へ回動させると、ピストン(40)への負荷状態が解除され、窪み(16)又は軟性袋状膜(15)の復帰力に依り、スパイクピン(5)は接地面(2)より没入する。尚、第8図の気密袋(24)の図示上部に第1図中の弾性体(4)、又は第2図中の保持棒体(12)及びスパイクピン(5)等を設けた場合も前述同様、気密袋(24)の押し上げ又は該逆作用が為される。尚、ピストン(40)への負荷が解除された時、各ピストン(40)は各々矢印Q方向へ移行する。第7図又は第8図示のホース(23)を、各々第13図の如く連通着した状態に於て、バルブ(42)より圧縮空気を圧入させると、隙間(22)又は気密袋(24)は窪み(16)の底部又は軟性袋状膜(15)を押し上げ、スパイクピン(5)を接地面(2)より突出させる事が出来、然る後適時、バルブ(42)より空気を抜けば、窪み(16)部又は軟性袋状膜(15)の復帰力に依り、スパイクピン(5)は接地面(2)より没入

する。尚、第8図中の気密袋(24)の図示上部に第1図中の弾性体(4)、又は第2図中の保持棒体(12)及びスパイクピン(5)等を設けた場合も前述同様、気密袋(24)の押し上げ又は該逆作用が為される。第7図又は第8図示のホース(23)を第13図の如く連通させ、且連通部分より更に第14図示のホース(46)に連通着した状態に於て、切換バルブ本体(47)の被係合片(48)を矢印R方向へ移動させると、b図で示した通気用欠如部(50)は、ホース(46)とパイプ(45)を連通させる位置に移行し、高压気体用タンク(44)からパイプ(45)に通じた高压気体は通気用欠如部(50)、ホース(46)、連通ホース(41)、各ホース(23)を経て隙間(22)又は気密袋(24)内に圧入し、窪み(16)の底部又は軟性袋状膜(15)の底部を押し上げ、スパイクピン(5)を接地面(2)より突出させる事が出来、然る後適時、被係合片(48)を図示状態に戻せば、ホース(46)内より排気用欠如部(51)を経て点線矢印の如く高压気体は放出され、窪み(16)部又は軟性袋状膜(15)の復帰力に依り、スパイクピン(5)は接地面(2)より没入する。尚、第8図の気密袋(24)の図示上部に第1図中の弾性体(4)、又は第2図中の保持棒体(12)及びスパイクピン(5)等を設けた場合も前述同様、気密袋(24)の押し上げ又は該逆作用が為される。又、第14図中の滑動バルブ(49)か図示状態にある時パイプ(45)内の高压気体は滑動バルブ(49)の図示底部に依り遮断状態となる。図cに依る状態は回動バルブ(52)か矢印Mへ回動した後の状態を示し、通気状態であり、被係合片(48)を矢印L方向へ回動させると、パイプ(45)は遮断され、且ホース(46)内の高压気体は排気用欠如部(51)を通じて外方へ放出される。尚、第9図に係る作用説明の如く第11、12図構造に於ても、被係合片(33)を矢印L、Mへ回動させる手段として、手にて回動させる以外に、第15図機構を以て車内よりの操作で回動させ得る事は勿論である。

#### 実施例

各実施例を図面に基づき説明すると次の通りである。尚、各図は各実施例の代表構図である。又、各実施例は、第17図に示したタイヤ(1)の接地面(2)部又は第18図に示したタイヤ被覆体(59)に於て実施されるのを基本の構造としている。

#### 第1実施例

第1図の如く、タイヤ(1)又はタイヤ被覆体(59)の接地面(2)に設けた孔より出入可能としたスパイクピン(5)を着された弾性体(4)を肉厚部(3)又は(60)内部に設け、弾性体(4)底部に設けた隙間に、弾性体(4)底部に接触作動する様にした凸部(8)を備えた回動体(6)を、支軸(7)に依り回動可能に軸着し、且回動体(6)に紐状物(10)、(1

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1)を各々着し、該各他端をタイヤ(1)又はタイヤ被覆体(59)の側面に摺動可能に導き出す。

## 第2実施例

第2図の如く、タイヤ(1)又はタイヤ被覆体(59)の接地面(2)に設けた孔より出入可能としたスパイクピン(5)を嵌設した保持枠体(12)を接地面(2)部の肉厚部(3)内部に埋設し、且スパイクピン(5)底部の突面部と保持枠体(12)内部にスプリング(13)を内装し、スパイクピン(5)にタイヤ(1)半径方向中心方向への蓄力を施し、且スパイクピン(5)底部付近に設けた隙間に介在し、スパイクピン(5)底部に接触作動する様にした凸部(8)を備えた回動体(6)を、支軸(7)に依り回動可能に軸着し、回動体(6)に紐状物(10)、(11)を各々着し、該各他端をタイヤ(1)又はタイヤ被覆体(59)の側面に摺動可能に導き出す。

## 第3実施例

第3図の如く、タイヤ(1)又はタイヤ被覆体(59)の接地面(2)に設けた孔より出入可能としたスパイクピン(5)を嵌設したシリンダー(14)と、該底部に液体を内包して着された軟性袋状膜(15)を肉厚部(3)又は(60)内に埋設し、軟性袋状膜(15)底部付近に設けた隙間に介在し且軟性袋状膜(15)底部に接触作動する様にした凸部(8)を備えた回動体(6)を、支軸(7)に依り回動可能に軸着し、且回動体(6)に紐状物(10)、(11)を各々着し、該各他端をタイヤ(1)又はタイヤ被覆体(59)の側面に摺動可能に導き出す。

## 第4実施例

第4図の如く、タイヤ(1)又はタイヤ被覆体(59)の接地面(2)に形成した窪み(16)内にスパイクピン(5)を植設し、窪み(16)部底部の肉厚部(3)又は(60)内部に設けた隙間(18)に介在し、且該窪み(16)底部分に接触作動する様にした凸部(8)を備えた回動体(6)を、支軸(7)に依り回動可能に軸着し、且回動体(6)に紐状物(10)、(11)を各々着し、該各他端をタイヤ(1)又はタイヤ被覆体(59)の側面に摺動可能に導き出す。

## 第5実施例

第1～4図示例の中から選ばれる弾性体(4)、第2図スパイクピン(5)、軟性袋状膜(15)、窪み(16)部の何れかの底部に設けた隙間に介在し且前記底部に接触作動する様にした凸部(8)を備えた回動体(6)を回動可能に設け、且回動体(6)に紐状物(19)を着して肉厚部(3)又は(60)内部を摺動可能として該他端をタイヤ(1)A側へ導き出し、且回動体(6)に紐状物(20)を着して肉厚部(3)又は(60)内部を摺動可能として該他端をタイヤ(1)B側へ導き出す。

## 第6実施例

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第6図の如く、タイヤ(1)又はタイヤ被覆体(59)の接地面(2)に形成した窪み(16)内にスパイクピン(5)を植設し、窪み(16)部底部の肉厚部(3)又は(60)内部に設けた隙間(18)に介在し、且該窪み(16)底部分に接触作動する様にした凸部(8)を備えた帯板(21)を、該一端をタイヤ(1)A側面へ、且該他端をタイヤ(1)B側面へ各々摺動可能に導き出す。

## 第7実施例

第7図の如く、タイヤ(1)又はタイヤ被覆体(59)の接地面(2)に形成した窪み(16)内にスパイクピン(5)を植設し、窪み(16)部底部の肉厚部(3)又は(60)内に隙間(22)を設け、隙間(22)に連通させたホース(23)又はパイプの他端を、タイヤ(1)側面へ導き出し、且隙間(22)及びホース(23)又は前記パイプ内に油圧又は空気圧作用を施し得る状態として実施する。

## 第8実施例

第1～3図示例の中から選出される横造の中の回動体(6)、紐状物(10)、(11)を排し、第1図の弾性体(4)又は第2図のスパイクピン(5)又は第3図の軟性袋状膜(15)の何れかの底部に第8図の如き気密袋(24)を肉厚部(3)内に設け、気密袋(24)に連通させて着したホース(23)を、その他端をタイヤ(1)側面に導き出して設け、且気密袋(24)及びホース(23)内に油圧又は空気圧作用を施し得る状態として実施する。

## 第9実施例

第1～4図示例の中から選出される構造の紐状物(10)の末端と紐状物(11)の末端とを各々両端に着した第9図の如きてこ状回動体(30)と、てこ状回動体(30)底部に接触作動する様にしたカム(27)を有するカム付回動体(26)を限定回動可能として備えた締付具本体(25)をタイヤ(1)、又はタイヤ被覆体(59)の側面、又はホイールに設ける様にして実施する。

## 第10実施例

第5実施例、つまり第1～4図に示した構成中の紐状物(10)、(11)を排した状態の中から選出された構造の中であって、第1図の弾性体(4)、第2図のスパイクピン(5)、第3図の軟性袋状膜(15)、第4図の窪み(16)底部の何れかの底部分に設けた隙間に介在し、該底部分に接触作動する様にした凸部(8)を備えた回動体(6)を、第5図の如く設け、回動体(6)に一端を着され且タイヤ(1)A側面へ摺動可能に導き出された紐状物(19)の他端に、第10図の如く各々架具(34)を着し、各架具(34)間にスプリング(35)を各々張架して、紐状物(19)に矢印I方向への蓄力を施す。又、回動体(6)に一端を着され且タイヤ(1)B側面へ摺動可能に導き出された紐状物(2

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0)の他端を、第9図のてこ状回動体(30)の図示右端、又は第11図のてこ状回動体(30)の図示右端、又は第16図の架具(57)に各々着し、紐状物(20)を矢印H方向へ適時、任意に引き締め、又は弛緩させる事が出来る様にする。

## 第11実施例

第6実施例(第6図)のタイヤ(1)A側面へ摺動可能に導き出された帯板(21)の末端に、第10図の如く各々架具(34)を着し、各架具(34)間にスプリング(35)を各々張架して、帯板(21)に矢印I方向への蓄力を施す。又、帯板(21)のタイヤ(1)B側面へ摺動可能に導き出された末端を、第11図のてこ状回動体(30)の図示右端に、又は第16図の各架具(57)に各々着して、帯板(21)を矢印H方向へ適時、任意に引き締め、又は弛緩させる事が出来る様にする。

## 第12実施例

第7実施例(第7図)中のタイヤ(1)側面に導き出されたホース(23)の末端、又は第8実施例(第8図で代表図示)中のタイヤ(1)側面に導き出されたホース(23)の末端を連通状態で着されたマスターシリンダー(39)と該マスターシリンダー(39)に嵌設されたピストン(40)に接触作動するカム(27)を有するカム付回動体(26)を限定回動可能に備えた第12図の如きマスターシリンダー保持体(38)を、タイヤ(1)又はタイヤ被覆体(59)の側面、又はホイールに設ける。

## 第13実施例

第7実施例(第7図)中のタイヤ(1)側面に導き出されたホース(23)の末端、又は第8実施例(第8図で代表図示)中のタイヤ(1)側面に導き出されたホース(23)の末端の個々にバルブを、又は前記ホース(23)を第13図の如く連通ホース(41)にて連通させ、且前記ホース(23)又は連通ホース(41)の何れかの任意箇所至少とも1個のバルブ(42)を設け、前記バルブ又はバルブ(42)より高圧気体(空気等)を封入、又は任意放出出来る様に構成する。

## 第14実施例

第7実施例(第7図)中のタイヤ(1)側面に導き出されたホース(23)の末端、又は第8実施例(第8図で代表図示)中のタイヤ(1)側面に導き出されたホース(23)の末端の各々を連通させてまとめたホース(46)を連通着された切換バルブ本体(47)を、ホイール(43)の表面側又は裏面側に設け、且切換バルブ(47)に直接又はパイプ(45)を介して連通させた高圧気体用タンク(44)を、第14図の如くホイール(43)の任意箇所に設け、切換バルブ機構中の滑動バルブ(49)又は回動バルブ(52)の移動又は回動に依り、前記ホース(23)部内、隙間(22)又は気密袋(24)内に高圧気体を封入、又は任意放出出来る様

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に構成する。以上各実施例を述べたが、各図示例は該代表例であり、構成説明中述べた細部の他例を巧みに組み合わせる事に依り、本発明の精神を逸脱する事なく、千差万別の変化、変形を為し得る事は勿論である。

## 発明の効果

本発明のスバイクピン出入タイヤを実用する時は、通常道路に於てはスバイクピンがタイヤ接地面内に没入した普通のタイヤとして、又、積雪、凍結道路に遭遇した場合は簡単な手作業、又は車外に出る事なく車内よりの操作に依り、タイヤ接地面よりスバイクピンを適時出入させる事が出来、特に都市部、山間部の降雪の差、降雪後の残存のずれ等に依る積雪、非積雪等の状況変化のある道路を走行する時に際して、臨機応変に対応出来る事に依り、従来の如き通常道路の走行に於る路面の損傷を防止する事が出来るばかりはでなく、スバイクピンの徒な摩耗を防止させる効果を呈するものである。

## 【図面の簡単な説明】

第1図aは一部欠如の平面図、同bは一部欠如の断面図、第2図aは一部欠如の平面図、同bは一部欠如の断面図、第3図aは一部欠如の平面図、同bは一部欠如の断面図、第4図aは一部欠如の平面図、同bは一部欠如の断面図、第5図aは一部欠如の平面図、同bは一部欠如の断面図、第6図aは一部欠如の平面図、同bは一部欠如の断面図、第7図aは一部欠如の平面図、同bは一部欠如の断面図、第8図は一部欠如の断面図、第9図aは一部欠如の側面図、同bはN~N' 鎖線の断面図、第10図a、bは一部欠如の側面図、第11図aは一部欠如の側面図、同bはO~O' 鎖線の断面図、第12図は一部欠如の側面図、第13図は側面図、第14図aは側面図、同bは斜視図、同cは断面図、第15図は一部断面の正面図、第16図は一部欠如の側面図、第17図は一部欠如の斜視図、第18図は断面図である。

- |              |               |
|--------------|---------------|
| (1)・・・タイヤ    | (2)・・・接地面     |
| (3)・・・肉厚部    | (4)・・・弾性体     |
| (5)・・・スバイクピン | (6)・・・回動体     |
| (7)・・・支軸     | (8)・・・凸部      |
| (9)・・・カバー    | (10)・・・紐状物    |
| (11)・・・紐状物   | (12)・・・保持枠体   |
| (13)・・・スプリング | (14)・・・シリンダー  |
| (15)・・・軟性袋状膜 | (16)・・・窪み     |
| (17)・・・基体    | (18)・・・隙間     |
| (19)・・・紐状物   | (20)・・・紐状物    |
| (21)・・・帯板    | (22)・・・隙間     |
| (23)・・・ホース   | (24)・・・気密袋    |
| (25)・・・締付具本体 | (26)・・・カム付回動体 |
| (27)・・・カム    | (28)・・・スリット   |
| (29)・・・回動阻止片 | (30)・・・てこ状回動体 |
| (31)・・・支軸    | (32)・・・保持片    |
| (33)・・・被係合片  | (34)・・・架具     |
| (35)・・・スプリング | (36)・・・スリット   |

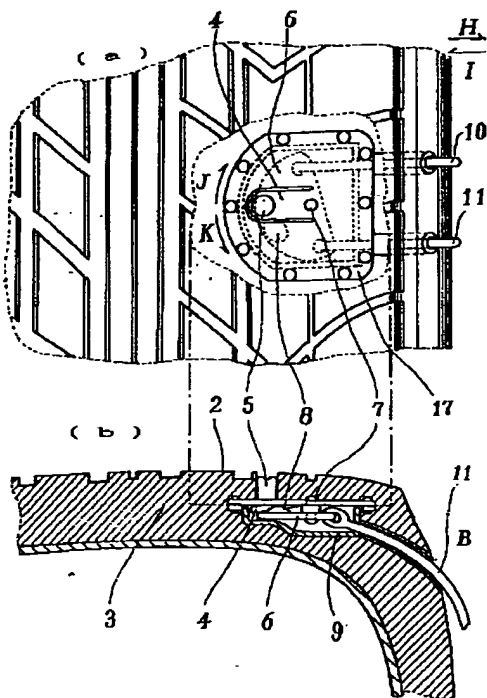
15

- (37)・・・短片  
 (38)・・・マスターシリンダー保持体  
 (39)・・・マスターシリンダー  
 (40)・・・ピストン (41)・・・連通ホース  
 (42)・・・バルブ (43)・・・ホイール  
 (44)・・・高圧気体用タンク (45)・・・パイプ  
 (46)・・・ホース (47)・・・切換バルブ(本体)  
 (48)・・・被係合片 (49)・・・滑動バルブ  
 (50)・・・通気用欠如部 (51)・・・排気用欠如部  
 (52)・・・回動バルブ (53)・・・ダンパー  
 (54)・・・係合片収納本体 (55)・・・係合片  
 (56)・・・操作ケーブル (57)・・・架具

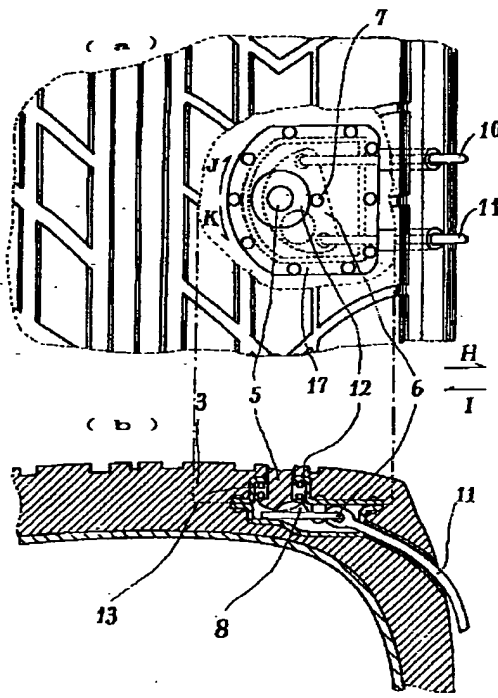
16

- (58)・・・ターンバックル  
 (59)・・・タイヤ被覆体 (60)・・・肉厚部  
 A・・・側 B・・・側  
 C・・・条線 D・・・条線  
 E・・・線 F・・・部材箇所  
 G・・・底部 H・・・矢印  
 I・・・矢印 J・・・矢印  
 K・・・矢印 L・・・矢印  
 M・・・矢印 N～N'・・・鎖線符合  
 10 O～O'・・・鎖線符合 P・・・矢印  
 Q・・・矢印 R・・・矢印  
 S・・・矢印 T・・・矢印

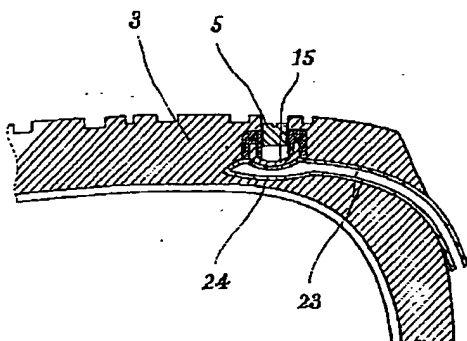
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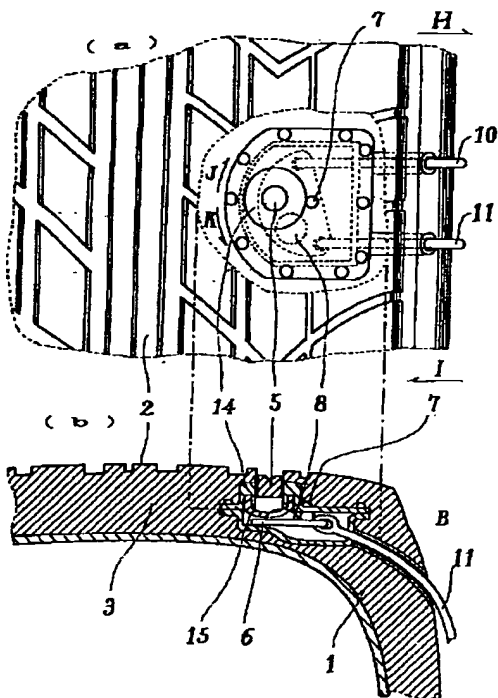
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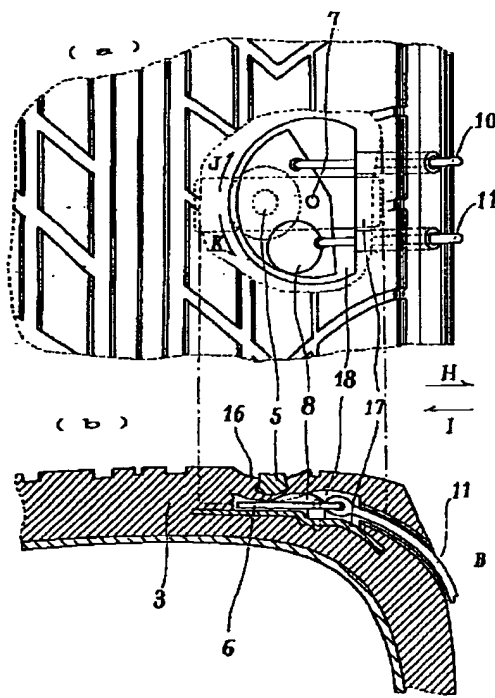
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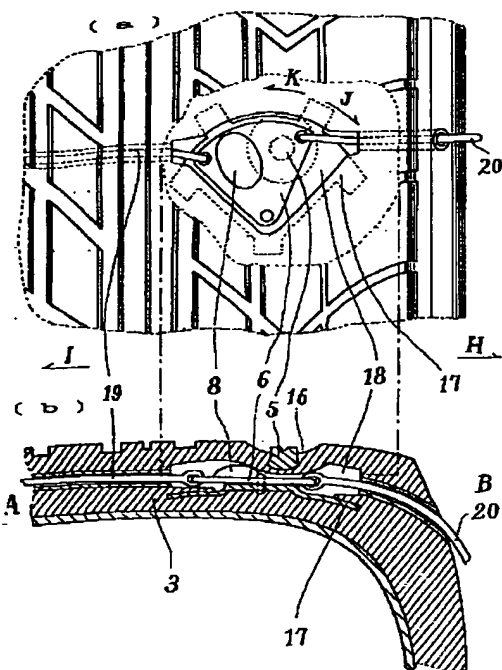
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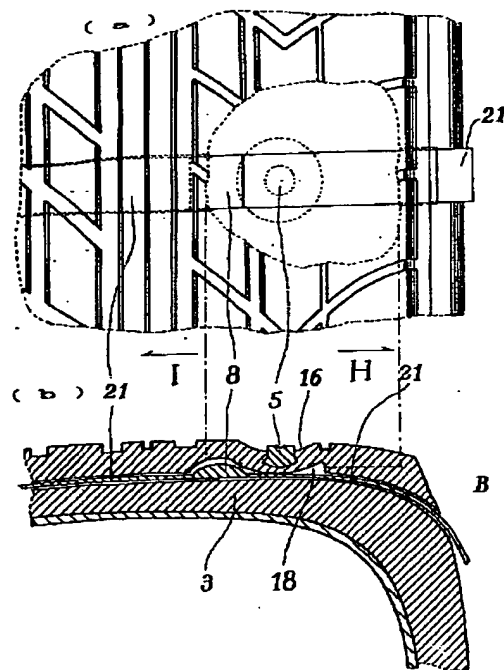
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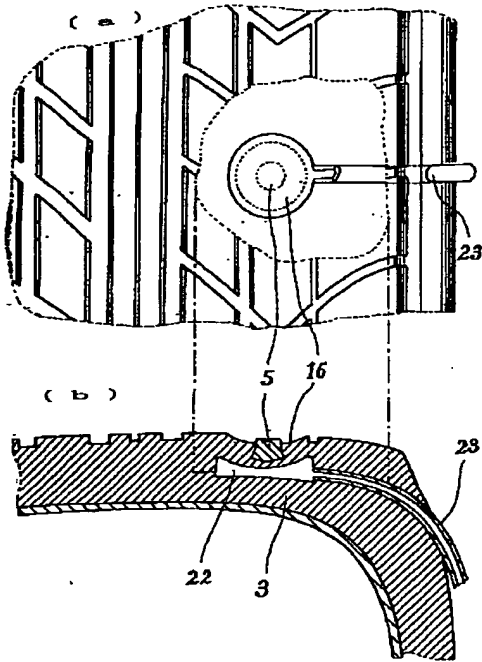
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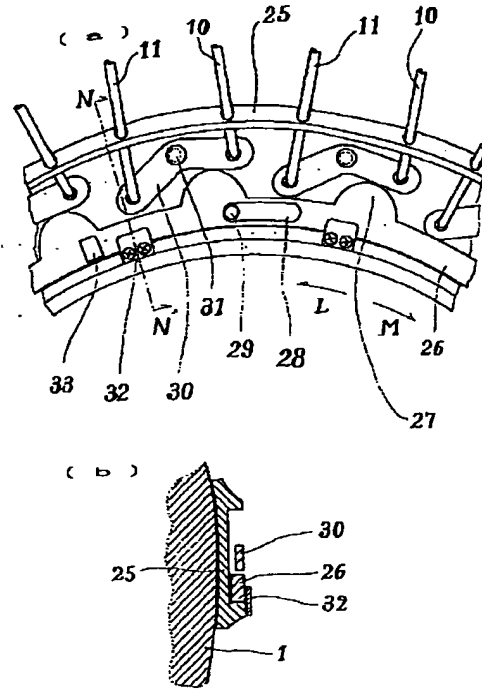
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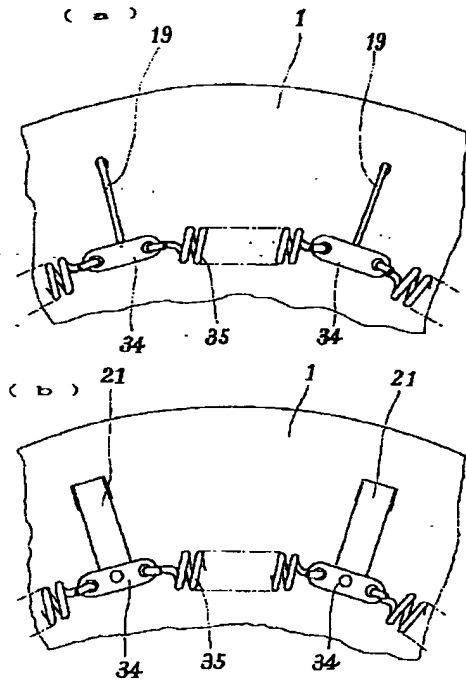
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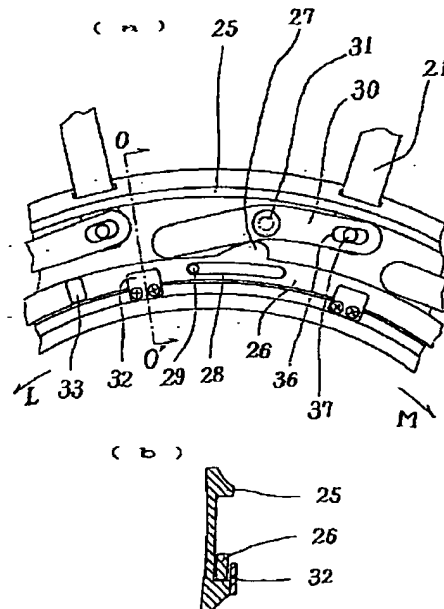
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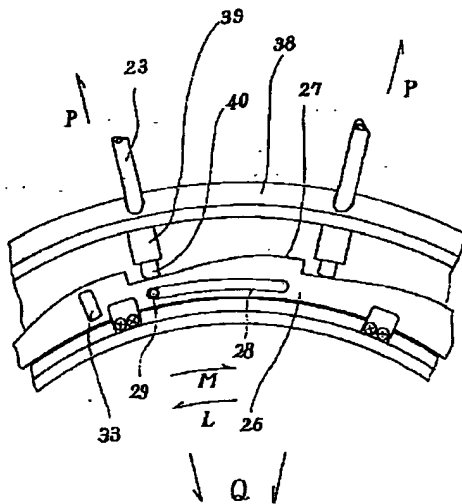
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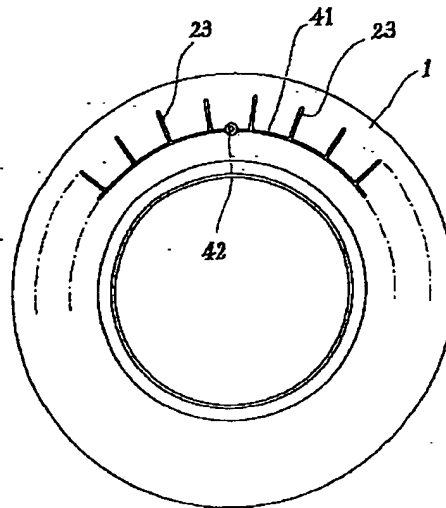
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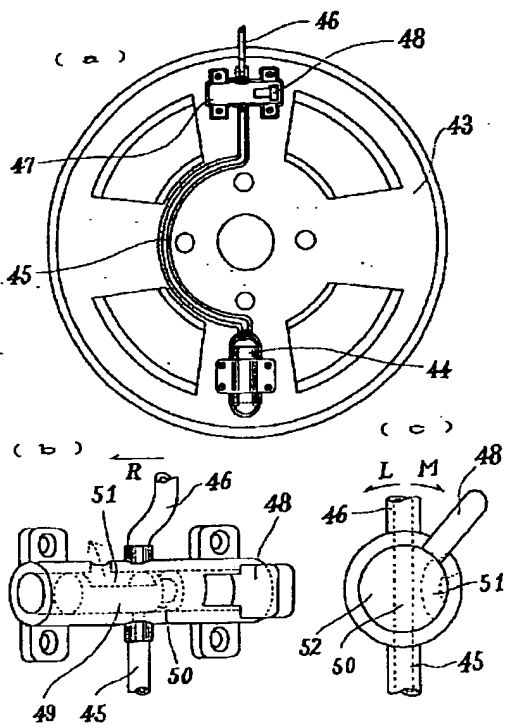
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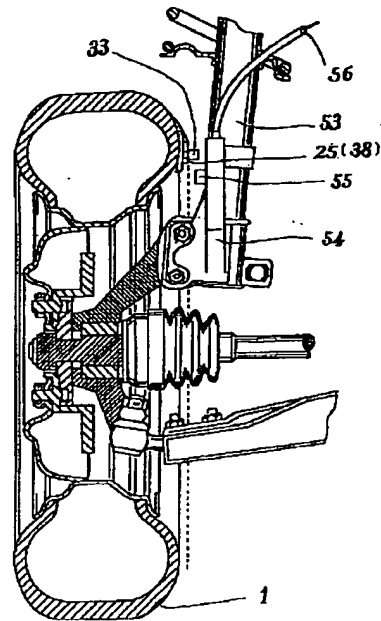
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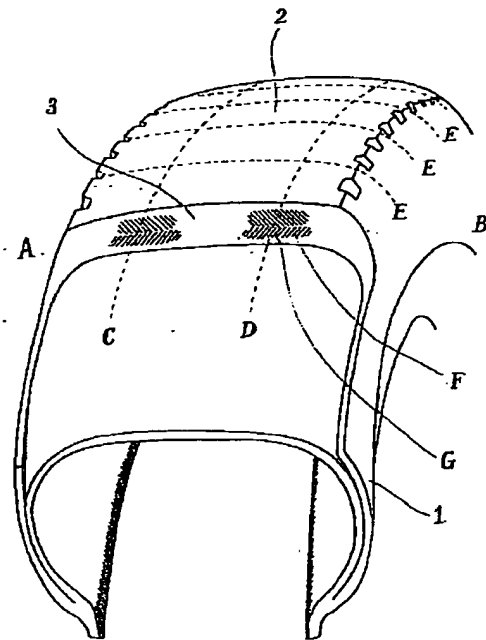
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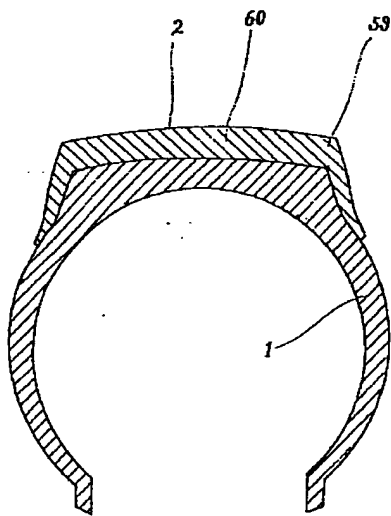
【第15図】



【第17図】



【第18図】





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**CLAIMS**

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**[Claim(s)]**

A rotation object which it was placed between crevices which prepared an elastic body which was able to prepare a spike pin whose in-and-out was enabled in the interior of the thick section of said ground-plane section, and were established in a \*\*\*\* elastic body pars basilaris ossis occipitalis from a hole prepared in 1, a tire ground plane, or a tire coat object ground plane, and equipped a \*\*\*\* elastic body pars basilaris ossis occipitalis with contact actuation \*\*\*\*\* heights a spike pin in-and-out tire which prepares, carries out each arrival of other string-like objects for a string-like object to a portion besides \*\*\*\* at a part of rotation portion of a \*\*\*\* rotation object, draws each other end of a \*\*\*\* string-like object possible [ sliding ] to a lateral portion of said tire or a tire coat object, and changes.

2, a tire ground plane To or a tire coat object ground plane A spike pin whose in-and-out was enabled from a prepared hole A fixed maintenance frame A rotation object which it was placed between crevices which gave animal power to the direction of a tire radial center to said spike pin, and were prepared near [ pars-basilaris-ossis-occipitalis ] a \*\*\*\* spike pin, and equipped this spike pin pars basilaris ossis occipitalis with contact actuation \*\*\*\*\* heights is established. the interior of the thick section of said ground-plane section -- preparing -- \*\* -- a string-like object into a part of rotation portion of a \*\*\*\* rotation object a spike pin in-and-out tire which carries out each arrival of other string-like objects to a portion besides \*\*\*\*, draws each other end of a \*\*\*\* string-like object possible [ sliding ] to a lateral portion of said tire or a tire coat object, and changes.

3, a tire ground plane It is placed between a crevice established in said elasticity saccate film pars basilaris ossis occipitalis. or a cylinder which attached an elasticity saccate film which fixed a spike pin whose in-and-out was enabled, and connoted a liquid to \*\*\*\*\* from a hole prepared in a tire coat object ground plane -- the interior of the thick section of said ground-plane section -- preparing -- \*\* -- contact actuation \*\*\*\*\* heights at the \*\*\*\* elasticity saccate film pars basilaris ossis occipitalis a spike pin in-and-out tire which establishes a rotation object which it had, carries out each arrival of other string-like objects for a string-like object to a portion besides \*\*\*\* at a part of rotation portion of a \*\*\*\* rotation object, draws each other end of a \*\*\*\* string-like object possible [ sliding ] to a lateral portion of said KUIYA or a tire coat object, and changes.

A rotation object which it was placed between crevices which were formed in 4, a tire ground plane, or a tire coat object ground plane, and which became depressed, implanted a spike pin inside and were established in the interior of \*\*\*\* hollow section pars-basilaris-ossis-occipitalis thickness, and equipped a \*\*\*\* hollow pars-basilaris-ossis-occipitalis portion with contact actuation \*\*\*\*\* heights is established. Into a part of rotation portion of a \*\*\*\* rotation object a string-like object a spike pin in-and-out tire which carries out each arrival of other string-like objects to a portion besides \*\*\*\*, draws each other end of a \*\*\*\* string-like object possible [ sliding ] to a lateral portion of said tire or a tire coat object, and changes.

The other end of a string-like object which eliminated a string-like object worn and used as a rotation object of 5 and the 1-4th terms of a patent claim, and was worn and used as a part of rotation portion of this rotation object is drawn possible [ sliding of A side of a tire or a tire coat object ]. preparing -- \*\* -- a spike pin in-and-out tire which draws another string-like object into a part for the said division and other portions of said rotation object which wore and carried out said string-like object possible [ sliding of B side of said tire or a tire coat object ], and grows the other end of a \*\*\*\*\* this string-like object into them in it.

The spike pin in-and-out tire which draws other ends of said strip to the side A of said tire or a tire coat object again possible sliding to B side of said tire or a tire coat object ], and changes the strip which it was placed between crevices which were formed in 6, a tire ground plane, or a tire coat object ground plane, and which became depressed, implanted a spike pin inside and were established in the interior of \*\*\*\* hollow section pars-basilaris-ossis-occipitalis thickness, and equipped a \*\*\*\* hollow pars-basilaris-ossis-occipitalis portion with contact

a hose or a pipe which was formed in 7, a tire ground plane, or a tire coat object ground plane and which becomes depressed, implants a spike pin inside, establishes a crevice in the interior of \*\*\*\* hollow section pars-basilaris-ossis-occipitalis thickness, and leads to a \*\*\*\* crevice -- a lateral portion of said tire or a tire coat object -- drawing -- preparing -- \*\* -- a spike pin in-and-out tire made into the condition that oil pressure or a pneumatic-pressure operation can be performed in said crevice and said hose, or a pipe.

An end of a hose which eliminates a rotation object and a string-like object of 8 and the 1-3rd terms of a patent claim, prepares an airtight bag in a pars basilaris ossis occipitalis of an elastic body of \*\*\*\* 1 term, a spike pin pars basilaris ossis occipitalis of the 2nd term, or an elasticity saccate film pars basilaris ossis occipitalis of the 3rd term, and leads in a \*\*\*\* airtight bag, or a pipe is drawn to a lateral portion of a tire or a tire coat object. preparing -- \*\* -- a spike pin in-and-out tire made into the condition that oil pressure or a pneumatic pressure operation can be performed in said airtight bag and said hose, or a pipe.

The spike pin in-and-out tire which prepared the main part of a band which established the rotation object with a cam which wears one string-like object drawn by a tire of a term elected, or the side of a tire coat object at an end, is carried out out of 9 and the 1-4th terms of a patent claim, and carries out the contact catalysis of the string-like object besides \*\* to a lever-like rotation object and this lever-like rotation object worn and used as other ends in the side or the wheel of said tire or \*\*\*\*-ed [ A tire of 10 and the 5th term of a patent claim or a string-like object drawn on A side of a tire coat object -- animal power to the direction of A side -- giving -- \*\* -- an end of a string-like object drawn on B side of said tire or a tire coat object into a portion with a bundle of a band formed in B side or a wheel of said tire or a tire coat object Or a spike pin in-and-out tire which wears and was made to use as an end of a lever which operates in the cam section of a rotation object with a cam prepared in a main part of a band prepared in B side or a wheel of said tire or a tire coat object rotatable.

A tire of 11 and the 6th term of a patent claim or a strip drawn on A side of a tire coat object -- animal power to the direction of A side -- giving -- \*\* -- an end of a strip drawn on B side of said tire or a tire coat object into a portion with a bundle of a band formed in B side or a wheel of said tire or a tire coat object Or a spike pin in-and-out tire which wears and was made to use as an end of a lever which operates in the cam section of a rotation object with a cam prepared in a main part of a band prepared in B side or a wheel of said tire or a tire coat object rotatable.

The spike pin in-and-out tire which prepared and constituted a master-cylinder supporter which established a rotation object with a cam which has a contact actuation \*\*\*\*\* cam at a piston fixed on a master cylinder which has an end of a hose drawn by a tire of 12, the 7th term of a patent claim, or the 8th term, or the side of a tire coat object, or a pipe fixed, and this piston rotatable on the side or a wheel of said tire or a tire coat object.

Each bulb at each end of a hose made to lead to a tire of 13, the 7th term of a patent claim, or the 8th term, or a lateral portion of a tire coat object, or a pipe or each hose or pipe of said which it was arranged in accordance with a periphery of said tire or a tire coat object, and was made into an arrangement condition on this side A spike pin in-and-out tire which is made open for free passage, equips an arbitration part of the \*\*\*\* free passage section, said hose, or a pipe with a bulb of a piece at least, and grows into it.

14 and a claim -- a change over bulb by which free passage fixation is carried out in a hose the 7th term or given in the 8th term, or an end of a pipe -- a front-face side [ of a wheel ], or near [ a front-face side ] side, this rear-face side, or near a rear-face side -- preparing -- \*\* -- a spike pin in-and-out tire which formed a tank for high voltage gases which said change over bulb was made to open for free passage in an arbitration part of said wheel, and constituted it.

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[Translation done.]

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**DETAILED DESCRIPTION**

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[Detailed Description of the Invention]

field-of-the-invention this invention on industry -- from the condition, i.e., the snow cover, or icy road of a route -- usually -- a route -- or according to change of reverse, a spike pin is related with a spike pin in-and-out tire from a tire ground plane having enabled it to take by actuation (under transit) from in the car [ easy handicraft or in the car / easy ].

It was a usual state for a spike tire to arrange and implant a spike pin in accordance with the periphery on the front face of touch-down, and to run indiscriminately not related to change of the route condition of snow cover and non-snow cover conventionally [ Prior-art ].

It faces that a pin runs with the always implanted spike tire conventionally [ trouble ] which invention tends to solve. The condition in an area with a gap of survival after the temporary snowfall of the condition [ which is called transit to a non-snowy road way and a snow cover route from a snow cover route ] especially mountain slope - city section etc. cannot but run regardless of change of a route condition. There was a defect, such as bringing forward wear of the spike pin instead of the length which makes \*\* usually damage a road surface in transit of a route as a result. In order to solve this between title, it enables it to usually go a spike pin in and out freely from a tire ground plane flexibly as an ordinary tire as a spike tire in snow cover and an icy road in the road.

Means this invention for solving a trouble may be carried out considering the thick section (3) of the ground plane (2) of a tire (1), and a ground plane (2) as main facility parts, as shown in drawing 17, and it may set it the bases of an example to be arranged like C which meets the periphery of a ground plane (2) as a written example of this invention, D striation, and E lines each in alignment with a periphery, and several articles arbitration is sufficient as C and a In the one embodiment, the operation part in alignment with the A [ of a tire (1) ] and B side shifts the E lines by the side of A, and the E lines by the side of B, and may be carried out again. F shows the outline of 1 member part of various examples, and calls the graphic display lower part G a pars basilaris ossis occipitalis altogether among this description. In addition, the A [ of a tire (1) ] and B side does not limit with the tire inside and an outside. Moreover, a drawing 1-7 is a plan which carried out front view of the ground plane (2) of D striation section in drawing 17 - B flank. Moreover, this invention can be carried out in the thick section (60) of the \*\*\*\* tire coat object (59) which showed the various embodiments mentioned later in drawing 18, and the tire coat object (59) depends on fixing to \*\*\*\* what broke off by 1-several places and is possible. It is as follows when the configuration of each example is described by making \*\*\*\* into a basic outline. As shown in drawing 1, the rotation object (6) which is placed between the elastic body (4) which wore and carried out the spike pin (5) whose in-and-out was enabled, and the crevice established in this pars basilaris ossis occipitalis, and has contact actuation \*\*\*\*\* heights (8) in a part for a \*\*\*\* pars basilaris ossis occipitalis from a ground plane (2) is prepared in the interior of the thick section (3). a string-like object (10) and (11) are worn and made a rotation object (6), and the each other end is drawn possible [ sliding ] to the tire (1) side. As shown in drawing 2, the rotation object (6) which the spike pin (5) whose in-and-out was enabled is placed between the crevices established in the maintenance frame (12) given and held and the spike pin (5) pars basilaris ossis occipitalis in the animal power to the direction of the depths, and has contact actuation \*\*\*\*\* heights (8) in a part for a \*\*\*\* pars basilaris ossis occipitalis from a ground plane (2) is prepared in the interior of the thick section (3). a string-like object (10) and (11) are worn and made a rotation object (6), and the each other end is drawn possible [ sliding ] to the tire (1) side. As shown in drawing 3, the cylinder (14) which wore and carried out the elasticity saccate film (15) which fixed the spike pin (5) whose in-and-out was enabled, and connoted the liquid to \*\*\*\*\* from the ground plane (2) is prepared in the interior of the thick section (3). the rotation object (6) which it is placed between \*\*\*\*\* saccate film (15) partes basilaris ossis occipitalis, and has contact actuation \*\*\*\*\* heights (8) at the \*\*\*\* pars basilaris ossis occipitalis is established, a string-like object (10) and (11) are worn and made a rotation object (6), and these the other end of each is drawn possible [ sliding ] to the tire (1) side. A spike pin (5) is implanted in the hollow (16) formed in the ground plane (2) as shown in drawing 4. the rotation object (6) which it is placed between the crevices (18) established in the interior of the thick section (3) of a hollow (16) section pars basilaris ossis occipitalis, and has contact actuation \*\*\*\*\* heights (8) at the \*\*\*\*\* (16) section pars basilaris ossis occipitalis is established, a string-like object (10) and (11) are worn and made a rotation object (6), and these the other end of each is drawn possible [ sliding ] to the tire (1) side. A spike pin (5) is implanted in the hollow (16) formed in the ground plane (2) as shown in drawing 5. The rotation object (6) which it is placed between the crevices (18) established in the interior of the thick section (3) of a hollow (16) section pars basilaris ossis occipitalis, and has contact actuation \*\*\*\*\* heights (8) at the \*\*\*\*\* (16) section pars basilaris ossis occipitalis is established. A string-like object (19) is tire (1) side B Passed through the \*\*\*\*\* other end on a rotation object (6), and the \*\*\*\*\* other end is drawn for a string-like object (20) possible

sliding ] to the tire (1) A side on a rotation object (6). In addition, this example of a graphic display can be carried out like \*\*\*\* in the example of the 1-3rd graphic displays, and is illustrated as instantiation. A spike pin (5) is implanted in the hollow (16) formed in the ground plane (2) as shown in drawing 6. This other end is drawn [ the strip (21) which it is placed between the crevices (18) established in the interior of the thick section (3) of a hollow (16) section pars basilaris ossis occipitalis, and has contact actuation \*\*\*\*\* heights (8) at the \*\*\*\*\* (16) section pars basilaris ossis occipitalis ] for the end possible [ sliding to A side of a tire (1) ] to A side of a tire (1). As shown in drawing 7, the crevice (22) which was formed in the ground plane (2) and which implanted the spike pin (5), became depressed in (16) by becoming depressed, and was established in the interior of the thick section (3) of (16) section pars basilaris ossis occipitalis, and a hose (23) are made to open for free passage, it closes, and the other end of a \*\* hose (23) is drawn to the tire (1) side. elastic body [ 15 ] and / in drawing 1 / drawing / 2 ] (4) although drawing 8 hung up the example of the 3rd graphic display as an example -- an elasticity saccate film -- (-- prepare an airtight bag (24) in each pars basilaris ossis occipitalis of an inside spike pin (5), and draw the hose (23) which is open for free passage to it on the tire (1) side. the main part of a band (25) prepared in the wheels side, such as a tire (1), as shown in drawing 9 -- a fixed frame -- the rotation object with cam (27) (26) made rotatable and the lever-like rotation object (30) by which contact actuation is carried out at a cam (27) are established, and the string-like object (10) elected from the example of the 1-4th graphic displays to the ends of a lever-like rotation object (30), and (11) In addition, the condition of having attached idly the string-like object (10) arranged like the E line each top in alignment with the periphery of the ground plane (2) of the example of the 1-4th graphic displays and (11) is shown. As shown in Drawing 10 a, each rack implement (34) is respectively worn at each end of each string-like object (19) of the 5th graphic display, and is made it, a spring (35) is laid [ firmly ] across a \*\*\*\*\* implement (34), animal power to the direction of arrow head I is given to each string-like object (19), and each end of each string-like object (20) of \*\*\*\* 5 graphic display is attached idly to each graphic display right end of each lever-like rotation object (30) of the In addition, nothing is worn and made each leftward section of each lever-like rotation object (30) in this case. Depend on a pivot (31) and the lever-like rotation object (30) which has at the end the slit (36) which fits loosely into the short piece (37) worn and used as B side edges each of each strip (21) of the 6th graphic display as shown in drawing 11 is established rotatable. The main part of a band (25) which was able to prepare the rotation inhibition piece (29) made into the loosely-fitting condition in the graphic display left-hand side of a \*\*\*\*\*-like rotation object (30) to the slit (28) prepared in the rotation object with a cam (26) which has the cam (27) which carries out contact actuation, and this arbitration part A tire (1) Or it prepares in the side of a tire coat object (59) or a wheel, a spring (35) is respectively laid [ firmly ] across the rack implement (34) which wore at each end drawn to the A side of each strip (21) of \*\*\*\* 6 graphic display respectively, and was used as it as shown in Drawing 10 b, and animal power to the direction of arrow head I is given to a strip (21). As shown in drawing 12, each master cylinder (39) by which free passage fixation was carried out respectively can be prepared in each end of drawing 7 or the hose (23) of drawing 8 graphic display. The master-cylinder supporter (38) which was able to prepare the rotation inhibition piece (29) made into the loosely-fitting condition in the slit (28) prepared in the rotation object with a cam (26) which has the cam (27) which carries out contact actuation at the piston (40) inserted in the \*\* master cylinder (39), and this arbitration part It prepares in the side of a tire (1), a tire coat object (59), or a wheel. It is drawing 7 as shown in drawing 13. Or the bulb like a bulb (42) is prepared in each end of the hose (23) of drawing 8 graphic display. or each hose (23) -- a free passage hose (41) -- with, open for free passage -- making -- closing -- the arbitration part of a \*\* hose (23) or a free passage hose (41) -- few -- \*\* -- the bulb (42) of a piece -- \*\*\*\*. As shown in drawing 14, are further open for free passage from drawing 7 or the free passage hose (41) which made each hose (23) of drawing 8 graphic display open for free passage. The drawn hose (46) is fixed. A \*\* hose (46) and a pipe (45) The lack section for free passage \*\*\*\*\* aeration (50), The change over valve body (47) which was equipped with the lack section for exhaust air (51), and was equipped with the sliding bulb (49) which slid to the direction of \*\*\*\*\* R or this hard flow, and was able to prepare the \*\*\*\*\* engagement piece (48) is prepared in the side of a wheel (43). The tank for high voltage gases (44) opened for free passage by the \*\* pipe (45) is formed in the arbitration part of a wheel (43). in addition, the liquefaction gas tank by which the tank for high voltage gases (44) is similar to an existing green gas holder or it -- with, it carries out -- having -- it etc. -- calling -- the tank for high voltage gases -- \*\*. moreover, the rotation bulb (52) which c drawing 14 shows deformation of b, wears an engaged piece (48) and is carried out, and is equipped with the lack section for lack section (hole) (50) for free passage \*\*\*\*\* aeration exhaust air (hole) (51), and carries out \*\*\*\* rotation of a \*\* hose (46) and the pipe (45) in \*\*\*\*\*L and the direction of M -- with, you may prepare and constitute on a wheel (43) like b above-mentioned. The engagement piece receipt main part (54) which equipped the engaged piece (48) which is the device of the engaged piece in [ out of drawing 9th / the /, 11, and 12 ] the device elected (33) or drawing 14, with was constituted as shown in drawing 15 with the engagement \*\*\*\*\* engagement piece (55) possible [ sliding of the graphic display upper and lower sides ] is attached in a damper (53). the piece of \*\*\*\*\* (55) -- an actuation cable (56) -- connecting -- timely -- an engagement piece (55) -- the graphic display upper and lower sides -- an actuation cable (56) -- with, it enables it to move In addition, the pivot which is each drawing agreement above and to which (7) of drawing 1st [ the ] and 2 \*\*\*\* each rotation object (6) rotatable if supplementary information is carried out, A base for (17) of drawing 1st [ the ], 2, 4, and 5 to depend on a pivot (7), and install each rotation object (6), A spring for (13) of covering for (9) of drawing 1 to secure the space of the actuation section and drawing 2 to pull down a spike pin (5) at the pars basilaris ossis occipitalis, The rotation inhibition piece which (28) of the maintenance piece for fitting in a rotation object with a cam (26) loosely and drawing 9 has (32) of drawing 9th [ the ] and 11 in a slit, and (29) has in a slit (28), and was prepared in the main part of a band (25), and (31) are the pivots for establishing a lever-like rotation object (30). As mentioned above, a \*\*\*\*\* configuration is doubled one by one, and shows drawing 1-14 and the 1-14th examples in each drawing, and the explanation of configuration details is as follows further. a \*\*\*\* wire rope with thin string-like object (10) of the 1-5th graphic

displays, (11), (19), (20), etc., a tough synthetic string, etc. -- with, it is constituted. Covering (9) of drawing 1-3 is a thing for securing space to the internal actuation section, and is good also as unnecessary in this. In the configuration of required space, the actuation sections (a rotation object (6), strip (21), etc.) are included by the matter which depends on a liquid or a gas, and is disappeared and eluted, and are removed after tire formation. this -- drawing 4-8 -- the same . that by which the base (17) of the 4-5th graphic displays is limited to a graphic display configuration -- it is not -- in short -- this -- a part is strongly laid underground and held in the thick section (3). The base (17) of the 1-5th graphic displays etc. is made unnecessary, and even if it wraps in strongly the parts of a part of pivot (7) (ends etc.) which supports a rotation object (6), an elastic body (4), a maintenance frame (12), a cylinder (14), etc. in the thick section (3), it lays them under it and it constitutes them in it, it can accomplish. The crevice between the 7th graphic display (22) is good also as the shape of an airtight bag (24) in the 8th graphic display . As other methods of the animal power the 10th graphic display , a spring may be arranged in a radial (it arranges to radial [ of a tire ]), and you may lay [ firmly ] across a direct string-like object (19) and a strip (21). As other examples of the 9th graphic display , it carries out as [ pull / only which string-like object of (10) and (11) / a lever-like rotation object (30) ], and even if it gives animal power pulled to a radial core to other string-like objects, it can accomplish. the band of existing which carries out each arrival of the rack implement (57) to each strip (21) which drawing 16 is what made the device of the 11th graphic display hand control, and was drawn by the tire (1) side, is a mounting beam thing and can otherwise miniaturize a turnbuckle (58) in each rack implement (57) -- with, of course, it can accomplish. The engaged piece (33) of the 9th, 11, and 12 graphic display projects in the direction of an axis a little from the whole wheel side surface. Although the master cylinder (39) of the 12th graphic display was carried out [ it wore it and ] and constituted on each hose (23), the master cylinder with a large capacity which bundled this etc. up is used, and even if it is open for free passage and being constituted on the hose packed like the \*\*\*\* 13 graphic display , it can accomplish. Moreover, the hose (23) of the 13th graphic display , a free passage hose (41), etc. may be made into a laying-under-the-ground condition on the tire (1) side, and a bulb (42) may be exposed and constituted. The 9-12th and the device with a bundle of drawings 16, and a horse gear style may be prepared in a wheel. in addition, the member which can succeed the main part of a band (25), a master-cylinder supporter (38), etc. in deformation of some when preparing in the tire (1) side -- with -- carrying out -- the tire (1) side -- adhesion or a part -- it attaches in the state of laying under the ground. The pipe (45) of the 14th graphic display may be made unnecessary, and direct continuation of the tank for high voltage airframes (44) may be carried out to a change over bulb (47) after taking wheel balance into consideration. Drawing 14 shows having prepared devices other than an engaged piece (48) in the laying-under-the-ground condition at the degree which does not project from the wheel (43) side. Moreover, it can accomplish, even if it forms a change over bulb (47) or the tank for high voltage gases (44) in the graphic display opposite hand of a wheel (43) and prepares an engaged piece (48) in the condition of having projected for a while on the side near the wheel outer diameter, and this \*\*\*\* is suitable for combination with the 15th graphic display structure. Although it illustrated having been arranged on the \*\*\*\* E line to D articles of the 17th graphic display and being hung up over them in drawing 7th [ the ] and 8, what was instituted on C line may be made to open this for free passage (when it to carry out in C line and D line Nijo). In addition, when the thing of C striation facilities, such as this, and the thing of D striation facility are each, it is desirable to also make into the B side the hose drawn from the thing of C striation facility, and to connect this to the same device of drawing 12 . As shown in drawing 17 , when D striation and C striation arrange the device of the 1-6th graphic displays on \*\*\*\* E line, a string-like object (10), (11), (19), a strip (21), etc. may be respectively constituted so that it may connect and the thing of D striation facility and the thing of C striation facility may be interlocked.

In a thing similar below an operation and among each example, it explains collectively. In the example of the 1-4th graphic displays, if a string-like object (10) is pulled in the direction of arrow head H from a graphic display condition It depends on each rotation object (6) rotating in the direction of arrow head J. Each heights (8) The elastic body of drawing 1 (4), The pars basilaris ossis occipitalis of the hollow (16) section of the spike pin (5) of drawing 2 , the elasticity saccate film (15) of drawing 3 , and drawing 4 is pushed up. If a spike pin (5) can be made to project, a string-like object (11) is pulled in the direction of arrow head H appropriate after timely (a string-like object (10) shifts to an arrow head I) and a rotation object (6) rotates in the direction of arrow head K from a ground plane (2) said elastic body (4), a spike pin (5), and an elasticity saccate film (15) -- it can become depressed, and can depend on the return force to each pars-basilaris-ossis-occipitalis direction of (16) section member, and each spike pin (5) can be engrossed from a ground plane (2). In the example of the 5th graphic display , if a string-like object (20) is pulled in the direction of arrow head H, a rotation object (6) will rotate in the direction of arrow head J. If it depends on heights (8) and becoming depressed and pushing up (16) section pars basilaris ossis occipitalis, it can do [ making a spike pin (5) project from a ground plane (2), or ] and an appropriate after string-like object (19) is pulled in the direction of arrow head I A rotation object (6) returns to a graphic display condition, can become depressed, can depend on the return force of (16) section member, and can engross a spike pin (5) from a ground plane (2). (Drawing 1-3 configuration is also this operation)

In the example of the 6th graphic display , if a strip (21) is pulled in the direction of arrow head H, it will depend on heights (8) becoming depressed and pushing up (16) section pars basilaris ossis occipitalis. If a spike pin (5) can be made to project from a ground plane (2) and an appropriate after strip (21) shifts in the direction of arrow head I, it returns to a graphic display condition, and it can become depressed, and can depend on the return force of (16) section member, and a spike pin (5) can be engrossed from a ground plane (2). In drawing 7-8, if the pressure of a liquid or a gas joins a crevice (22) and an airtight bag (24) through a hose (23) It can depend on pushing up a hollow (16) section pars basilaris ossis occipitalis and an elasticity saccate film (15), and a spike pin (5) can be made to project from a ground plane (2). If said pressure is decompressed, it can become depressed, and it can depend on the return force of (16) and an elasticity saccate film (15), and a spike pin (5) can be engrossed from a ground plane (2). In drawing 9 , if a rotation object with a cam (26) is rotated in the direction of slit (28) part arrow head L. If it depends

on a cam (27) pushing up the graphic display left of a lever-like rotation object (30), and a string-like object (10) is made a graphic display lower part, tension \*\*\*\*\* (11) is made the graphic display upper part and a rotation object with an appropriate after cam (26) rotates in the direction of arrow head M A string-like object (11) is made a graphic display lower part, tension \*\*\*\*\* (10) is made the graphic display upper part, and it returns to a graphic display condition. In addition, there are a method of moving an engaged piece (33) by hand, and the method of depending and moving to actuation from in the car as a means rotate a rotation object with a cam (26), about the latter, it depends on lengthening the actuation cable (56) of drawing 15 from in the car, making an engagement piece (55) engage with an engaged piece (33), and moving forward or retreating a vehicle a little, and the above-mentioned actuation can be accomplished. moreover, the member which carried out said one side or both covariant form, and gave \*\*\*\*\* in order that an engagement piece (55) and an engaged piece (33) might cancel the engagement after need actuation -- with, it carries out. Moreover, shift of said string-like object (10) and (11) is interlocked with the 1-4th graphic display device or the 5th graphic display device. Where it consisted of combination of drawing 5th [ the ], 9, and 10, it gave horse gear to the string-like object (19) in the direction of arrow head I and \*\*\*\*\* (20) is fixed to the graphic display right end of a drawing 9 a lever-like rotation object (30) If a rotation object with a cam (26) is rotated in the direction of arrow head L, a cam (27) will push up a lever-like rotation object (30) left. Resist the horse gear of the direction of arrow head I, and tension and a rotation object (6) rotate a string-like object (20) in the direction of arrow head J in the direction of arrow head H. If depend on heights (8) becoming depressed and pushing up (16) section pars basilaris ossis occipitalis, a spike pin (5) is made to project from a ground plane (2) and a rotation object with a cam (26) rotates in the direction of arrow head M the appropriate back A rotation object (6) rotates in the direction of arrow head K, it becomes depressed, and depends on the return force of (16) sections, and return and a spike pin (5) are absorbed in a graphic display condition from a ground plane (2). In addition, if it is in the thing of the structure which became depressed and transposed (16) sections to the spike pin section of drawing 1-3, said heights (8) of operating like the above-mentioned at the pars basilaris ossis occipitalis of the elastic body (4) of drawing 1 and the spike pin (5) of drawing 2 and the pars basilaris ossis occipitalis of the elasticity saccate film (15) of drawing 3 (pushing up) are natural. Moreover, among this example, if a turnbuckle (58) is turned in the direction of arrow head T where this graphic display strip (21) portion is changed to a string-like object (20) when drawing 9 structure is transposed to the thing of drawing 16 structure, it will succeed a string-like object (20) in an operation like the tension and the above-mentioned to the direction of arrow head H. Consist of combination of drawing 6th [ the ], 10, and 11, and the strip (21) drawn to the B side of a tire (1) is fixed to the lever-like rotation object (30) of the 11th graphic display. As shown in Drawing 10 b, where a spring (35) is laid, the strip (21) drawn to the A side of a \*\* tire (1) If a rotation object with a cam (26) is rotated in the direction of arrow head L, a cam (27) will push up the left of a lever-like rotation object (30). Resist the horse gear to the direction of arrow head I, and a strip (21) is slid in the direction of arrow head H. Heights (8) can become depressed, (16) section pars basilaris ossis occipitalis can be pushed up, and a spike pin (5) can be made to project from a ground plane (2). If a rotation object with an appropriate after cam (26) is rotated in the direction of arrow head M, it depends on the horse gear to the direction of arrow head I, and a strip (21) can shift in the direction of arrow head I, and can engross a spike pin (5) from a ground plane (2). Moreover, if a turnbuckle (58) is turned in the direction of arrow head T and it turns in the direction of arrow head S appropriate after timely when the drawing 11 structure concerned of the inside of an example is placed and changed into the thing of drawing 16 structure, it will succeed in the same operation as the above-mentioned. Where free passage arrival is respectively carried out to the master cylinder (39) of the 12th graphic display, the hose (23) of drawing 7 or drawing 8 structure When a rotation object with a cam (26) is rotated in the direction of arrow head L, a cam (27) respectively a piston (40) in the direction of arrow head P Push, The internal oil for oil pressure presses fit in a crevice (22) or an airtight bag (24). If a hollow (16) section pars basilaris ossis occipitalis or an elasticity saccate film (15) pars basilaris ossis occipitalis can be pushed up, a spike pin (5) can be made to project from a ground plane (2) and a rotation object with a cam (26) is rotated in the direction of arrow head M appropriate after timely The loaded condition to a piston (40) is canceled, and it becomes depressed, and depends on the return force of (16) or an elasticity saccate film (15), and a spike pin (5) is absorbed from a ground plane (2). In addition, as well as the above-mentioned when the elastic body in drawing 1 (4) or the maintenance frame in drawing 2 (12), a spike pin (5), etc. are prepared in the graphic display upper part of the airtight bag (24) of drawing 8, an airtight bag (24) pushes up or it succeeds in this counteraction. In addition, the load to a piston (40), or when it is canceled, each piston (40) shifts in the direction of arrow head Q respectively. In the condition which carried out free passage arrival of drawing 7 or the hose (23) of the 8th graphic display respectively as shown in drawing 13, if the compressed air is made to press fit from a bulb (42) If a crevice (22) or an airtight bag (24) can become depressed, and can push up the pars basilaris ossis occipitalis or elasticity saccate film (15) of (16), a spike pin (5) can be made to project from a ground plane (2) and air is extracted from a bulb (42) appropriate after timely It depends on the return force of the hollow (16) section or an elasticity saccate film (15), and a spike pin (5) is absorbed from a ground plane (2). In addition, as well as the above-mentioned when the elastic body in drawing 1 (4) or the maintenance frame in drawing 2 (12), a spike pin (5), etc. are prepared in the graphic display upper part of the airtight bag in drawing 8 (24), an airtight bag (24) pushes up or it succeeds in this counteraction. Drawing 7 or the hose (23) of the 8th graphic display is made to open for free passage, as shown in drawing 13, and it is drawing 14 more nearly further than a \*\*\*\*\* portion. If the hose (46) of \*\* is made to move the engaged piece (48) of a change over valve body (47) in the direction of arrow head R in the condition which carried out free passage arrival, the lack section for aeration (50) shown in b drawing The high voltage gas which shifted to the location which makes a hose (46) and a pipe (45) open for free passage, and led to the pipe (45) from the tank for high voltage gases (44) The lack section for aeration (50), It presses fit in a crevice (22) or an airtight bag (24) through a hose (46), a free passage hose (41), and each hose (23). If the pars basilaris ossis occipitalis of a hollow (16) or the pars basilaris ossis occipitalis of an elasticity saccate film (15) can be pushed up, a spike pin

(5) can be made to project from a ground plane (2) and an engaged piece (48) is returned to a graphic display condition appropriate after timely Through the lack section for exhaust air (51), like a dotted-line arrow head, a high voltage gas is emitted, and it becomes depressed, and depends on the return force of (16) sections or an elasticity saccate film (15), and a spike pin (5) is absorbed [ inside / of a hose (46) ] from a ground plane (2). In addition, as well as the above-mentioned when the elastic body in drawing 1 (4) or the maintenance frame in drawing 2 (12), a spike pin (5), etc. are prepared in the graphic display upper part of the airtight bag (24) of drawing 8, an airtight bag (24) pushes up or it succeeds in this counteraction. moreover, the time of being in the sliding bulb (49) and graphic display condition in drawing 14 -- the high voltage gas in a pipe (45) -- the graphic display pars basilaris ossis occipitalis of a sliding bulb (49) -- depending -- \*\*\*\*\* -- \*\* The condition of depending on drawing c shows the condition after rotating to a rotation bulb (52) and an arrow head M, and it is in an aeration condition, and if an engaged piece (48) is rotated in the direction of arrow head L, a pipe (45) will be intercepted and the high voltage gas in a \*\* hose (46) will be emitted to the method of outside through the lack section for exhaust air (51). in addition, except for making it rotate by hand as a means to rotate an engaged piece (33) to arrow heads L and M also in drawing 11th and 12 structure like the operation explanation concerning drawing 9 -- drawing 15 device -- with, it is natural that it may be made to rotate by actuation [ in the car ].

It is as follows when example each example is explained based on a drawing. In addition, each drawing is the representation composition of each example. Moreover, each example makes it basic structure to carry out in the tire coat object (59) shown in the ground-plane(2) section of the tire (1) shown in drawing 17, or drawing 18.

The elastic body (4) which wore the spike pin (5) whose in-and-out was enabled, and was carried out from the hole prepared in the ground plane (2) of a tire (1) or a tire coat object (59) the 1st example as shown in drawing 1 is prepared in the interior of the thick section (3) or (60). The rotation object (6) which equipped the crevice established in the elastic body (4) pars basilaris ossis occipitalis with the heights (8) which were made to carry out contact actuation at the elastic body (4) pars basilaris ossis occipitalis It depends on a pivot (7) and fixes to revolve rotatable, and a string-like object (10) and (11) are respectively worn to \*\*\*\*\* (6), and are made it, and this each other end is drawn possible [ sliding of the side of a tire (1) or a tire coat object (59) ].

The maintenance frame (12) which fixed the spike pin (5) whose in-and-out was enabled from the hole prepared in the ground plane (2) of a tire (1) or a tire coat object (59) the 2nd example as shown in drawing 2 is laid under the interior of the thick section (3) of the ground-plane (2) section. The inner package of the spring (13) is carried out to the interior of the raised face part \*\*\*\*\* frame (12) of a \*\* spike pin (5) pars basilaris ossis occipitalis. The horse gear to the direction of a tire (1) radial center are given to a spike pin (5). The rotation object (6) which it was placed between the crevices prepared near the \*\* spike pin (5) pars basilaris ossis occipitalis, and equipped the spike pin (5) pars basilaris ossis occipitalis with the heights (8) which were made to carry out contact actuation It depends on a pivot (7) and fixes to revolve rotatable, and a string-like object (10) and (11) are respectively worn on a rotation object (6), and are made it, and this each other end is drawn possible [ sliding of the side of a tire (1) or a tire coat object (59) ].

The cylinder which fixed the spike pin (5) whose in-and-out was enabled from the hole prepared in the ground plane (2) of a tire (1) or a tire coat object (59) the 3rd example as shown in drawing 3 (14), The elasticity saccate film (15) which connoted the liquid at this pars basilaris ossis occipitalis, wore at it, and was made into it is laid underground in the thick section (3) or (60). The rotation object (6) equipped with the heights (8) which it is placed between the crevices prepared near the elasticity saccate film (15) pars basilaris ossis occipitalis, and were made to carry out contact actuation at a \*\*\*\*\* saccate film (15) pars basilaris ossis occipitalis It depends on a pivot (7) and fixes to revolve rotatable, and a string-like object (10) and (11) are respectively worn to \*\*\*\*\* (6), and are made it, and this each other end is drawn possible [ sliding of the side of a tire (1) or a tire coat object (59) ].

A spike pin (5) is implanted in the hollow (16) formed in the ground plane (2) of a tire (1) or a tire coat object (59) the 4th example as shown in drawing 4. It is placed between the crevice (18) established in the interior of the thick section (3) of a hollow (16) section pars basilaris ossis occipitalis, or (60). It depends on a pivot (7) and the rotation object (6) which equipped the \*\*\*\* hollow (16) bottom portion with the heights (8) which were made to carry out contact actuation is fixed to revolve rotatable, a string-like object (10) and (11) are respectively worn to \*\*\*\*\* (6), and are made it, and this each other end is drawn possible [ sliding of the side of a tire (1) or a tire coat object (59) ].

The elastic body (4), drawing 2 spike pin (5) which are chosen from the examples of the 1-4th graphic displays of the 5th example, The rotation object (6) which equipped said pars basilaris ossis occipitalis with the heights (8) which were made to carry out contact actuation is established rotatable. an elasticity saccate film (15) and the crevice which it became depressed and was established in which pars basilaris ossis occipitalis of (16) sections -- intervening -- \*\* -- A string-like object (19) is worn and made a \*\*\*\* dynamic body (6), sliding of the thick section (3) or the interior of (60) is enabled, this other end is drawn to the tire (1) A side, a string-like object (20) is worn and made \*\*\*\*\* (6), sliding of the thick section (3) or the interior of (60) is enabled, and this other end is drawn to the tire (1) B side.

A spike pin (5) is implanted in the hollow (16) formed in the ground plane (2) of a tire (1) or a tire coat object (59) the 6th example as shown in drawing 6. It is placed between the crevice (18) established in the interior of the thick section (3) of a hollow (16) section pars basilaris ossis occipitalis, or (60), and this end is drawn to the tire (1) A side, and the \*\*\*\* other end is respectively drawn for the strip (21) which equipped the \*\*\*\* hollow (16) bottom portion with the heights (8) which were made to carry out contact actuation possible [ sliding ] to the tire (1) B side.

A spike pin (5) is implanted in the hollow (16) formed in the ground plane (2) of a tire (1) or a tire coat object (59) the 7th



example as shown in drawing 7 . A crevice (22) is prepared in the thick section (3) of a hollow (16) section pars basilaris ossis occipitalis, or (60). The other end of the hose (23) which the crevice (22) was made to open for free passage, or a pipe is drawn to the tire (1) side, and it carries out as a condition that oil pressure or a pneumatic pressure operation can be performed in \*\*\*\*\* (22) and a hose (23), or said pipe.

The rotation object in \*\*\*\* elected from the examples of the 1-3rd graphic displays of the 8th example (6), Eliminate a string-like object (10) and (11), and the airtight bag (24) like drawing 8 is prepared in the thick section (3) at which pars basilaris ossis occipitalis of the elastic body (4) of drawing 1 , the spike pin (5) of drawing 2 , or the elasticity saccate film (15) of drawing 3 . An airtight bag (24) is made open for free passage, the other end is drawn on the tire (1) side, the hose (23) worn and carried out is prepared, and it carries out as a condition that oil pressure or a pneumatic pressure operation can be performed in a \*\* airtight bag (24) and a hose (23).

The lever-like rotation object like drawing 9 which wore and made ends respectively the end of the string-like object (10) of structure and the end of a string-like object (11) which are elected out of the example of the 1-4th graphic displays of the 9th example (30), the rotation object with a cam (26) which has the cam (27) which was made to carry out contact actuation at the lever-like rotation object (30) pars basilaris ossis occipitalis -- definition -- as the main part of a band (25) which it had as rotatable is prepared in the side of a tire (1) or a tire coat object (59), or a wheel, it is carried out on it.

The 5th example of the 10th example, i.e., the string-like object under configuration shown in drawing 1-4, (10) It is in the structure elected from the conditions of having eliminated (11). The elastic body of drawing I (4), It is placed between the crevice established in which bottom portion of the hollow (16) pars basilaris ossis occipitalis of the spike pin (5) of drawing 2 , the elasticity saccate film (15) of drawing 3 , and drawing 4 . The rotation object (6) which equipped this bottom portion with the heights (8) which were made to carry out contact actuation As shown in drawing 10 , wear and make a rack implement (34) respectively the other end of the string-like object (19) which prepared, wore the end on the rotation object (6), was used as it, and was drawn possible [ sliding ] to the \*\* tire (1) A side as shown in drawing 5 , and a spring (35) is respectively laid between each rack implement (34). The horse gear to the direction of arrow head I are given to a string-like object (19). Moreover, the other end of the string-like object (20) which wore the end on the rotation object (6), was used as it, and was drawn possible [ sliding ] to the \*\* tire (1) B side It wears to the graphic display right end of the lever-like rotation object (30) of drawing 9 , the graphic display right end of the lever-like rotation object (30) of drawing 11 , or the rack implement (57) of drawing 16 respectively, and is made it, and a string-like object (20) is tightened to arbitration timely in the direction of arrow head H, or it enables it to make it loosen.

As shown in drawing 10 , a rack implement (34) is respectively worn and made the end of the strip (21) drawn possible [ sliding ] to the tire (1) A side of the 6th example ( drawing 6 ) of the 11th example ], at it, a spring (35) is respectively laid between each rack implement (34), and the horse gear to the direction of arrow head I are given to a strip (21). moreover, the end drawn possible [ sliding ] to the tire (1) B side of a strip (21) ] -- the graphic display right end of the lever-like rotation object (30) of drawing 11 -- or each arrival is carried out to each rack implement (57) of drawing 16 , and a strip (21) is tightened to arbitration timely in the direction of arrow head H, or it enables it to make it loosen

The end of the hose (23) drawn by the tire (1) side in the 7th example ( drawing 7 ) of the 12th example, Or the cam (27) which carries out contact actuation at the piston (40) fixed on the master cylinder (39) which wore the end of the hose (23) drawn by the tire (1) side in the 8th example (it is a representation graphic display in drawing 8 ) in the state of the free passage, and was carried out, and this master cylinder (39) the rotation object with a cam (26) which it has -- definition -- the master-cylinder supporter (38) like drawing 12 which it had rotatable is prepared in the side of a tire (1) or a tire coat object (59), or a wheel. The end of the hose (23) drawn by the tire (1) side in the 7th example ( drawing 7 ) of the 13th example, To each of the end of the hose (23) drawn by the tire (1) side in the 8th example (it is a representation graphic display in drawing 8 ), or a bulb Or said hose (23) is made to open for free passage with a free passage hose (41), as shown in drawing 13 . \*\*\*\*\* -- at least one bulb (42) is prepared in which arbitration part of a hose (23) or a free passage hose (41), and it constitutes so that enclosure or the arbitration bleedoff of the high voltage gases (air etc.) can be carried out from said bulb or bulb (42).

The end of the hose (23) drawn by the tire (1) side in the 7th example ( drawing 7 ) of the 14th example, Or the change over valve body (47) by which free passage arrival was carried out in the hose (46) which was made to open for free passage each of the end of the hose (23) drawn by the tire (1) side in the 8th example (it is a representation graphic display in drawing 8 ), and was packed The tank for high voltage gases (44) which formed in the front-face [ of a wheel (43) ], or rear-face side, and the \*\*\*\*\* bulb (47) was made to open for free passage through direct or a pipe (45) As shown in drawing 14 , it prepares in the arbitration part of a wheel (43), and depends on migration or rotation of the sliding bulb in a change over valve mechanism (49) or a rotation bulb (52), and it constitutes so that enclosure or the arbitration bleedoff of the high voltage gas can be carried out in said hose (23) circles, a crevice (22), or an airtight bag (24). Although each example was described above, each example of a graphic display is this example of representation, and of course, it can succeed in a change of infinite variety and deformation, without depending on combining skillfully the other examples of the details described during configuration explanation, and deviating from the pneuma of this invention.

When using the spike pin in-and-out tire of effect-of-the-invention this invention usually, in a route, a spike pin as an ordinary tire absorbed in the tire ground plane Moreover, it depends on actuation [ in the car ], without coming outside easy handicraft or a vehicle, when snow cover and an icy road are encountered. It faces, when running a route with change of a situation, such as snow cover which a spike pin can be made to go in and out timely from a tire ground plane, especially depends on a gap of survival after the difference of the snowfall of the city section and a mountain slope and snowfall etc., and non-snow cover. It depends on



the ability to respond flexibly, it does not come out that breakage on a \*\*\*\* road surface can be prevented to transit of the conventional \*\*\*\* usual route, and the effect of making \*\*\*\* wear of a spike pin preventing is presented.

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[Translation done.]